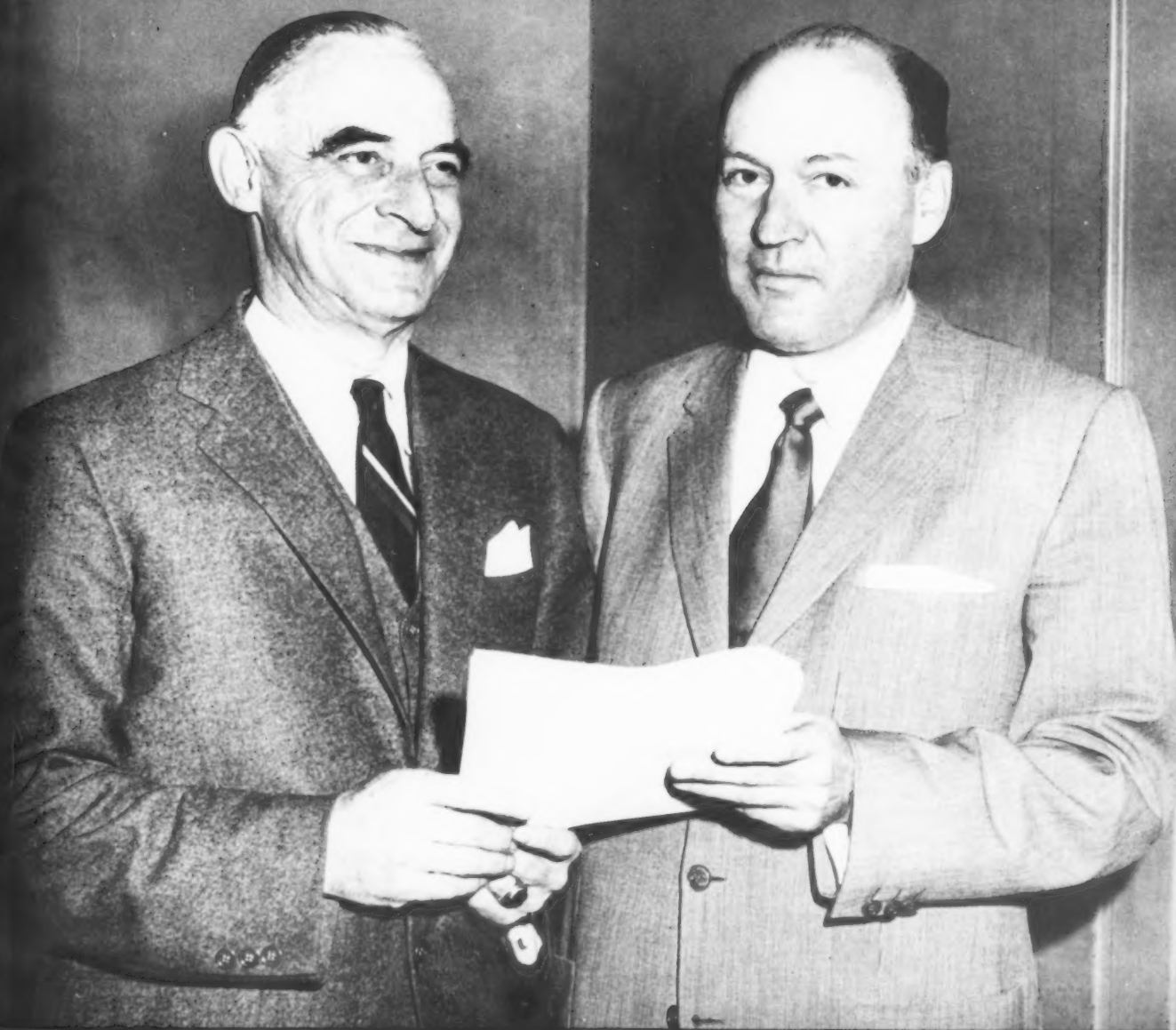


SOAP AND CHEMICAL SPECIALTIES

FEBRUARY 1959



Gen. Lucius D. Clay, chairman, Continental Can Co., guest speaker at Soap Assn. meeting last month, with Andrew K. Forthmann, right, head of Los Angeles Soap Co., who was reelected president of the association for 1959.

IN THIS ISSUE

Anionics in heavy duty detergent formulation	49
Role of fragrance in aerosol products	71
Insect repellents—their present status	77
Disinfectants and hospital infection	67



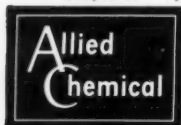
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Cover photo: Andrew K. Forthmann, right, president of the Soap Association, discusses speech to be given by Gen. Lucius D. Clay, left, chairman of Continental Can Co., during 32nd annual meeting of the association. Gen. Clay spoke at luncheon on Jan. 21, on the political situation in Europe.

SOAP AND CHEMICAL SPECIALTIES



IN THIS ISSUE

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37 IN BRIEF AS THE EDITOR SEES IT

41 AS THE READER SEES IT

43 DETERGENTS, CLEANSERS, SOAPS

45 SOAP ASSOCIATION MEETS, REELECTS FORTHMANN

49 ANIONIC SURFACTANTS IN HEAVY DUTY DETERGENTS, *by C. C. Tillotson*

53 ANIONICS IN TOILETRIES & PERSONAL PRODUCTS, *by J. M. Longfellow*

57 DETERGENT ADSORPTION ON SOIL AND SUBSTRATE, *by Jay C. Harris*

63 CHEMICAL SPECIALTIES

67 HOSPITAL INFECTION AND ENVIRONMENTAL DISINFECTION, *by E. G. Klarmann*

71 FRAGRANCE IN AEROSOL PRODUCTS, *by E. R. van Liew and Victor DiGiacomo*

77 INSECT REPELLENTS, *by Z. Z. Dworkin*

87 LABELING AUTOMOTIVE CHEMICALS, *by Nicholas M. Walker*

91 CSMA SECRETARY'S REPORT, *by H. W. Hamilton*

107 PACKAGING

111 PACKAGING NOTES

112 SOAP BAGS BOW OUT AT COLGATE

115 NEW PRODUCTS PICTURES

119 NEW TRADE MARKS

123 PRESSURE PACKAGING

131 PRODUCTION

133 CONTINUOUS SOAP PROCESSING

139 BOOK REVIEWS

141 NEW PATENTS

145 PRODUCTS AND PROCESSES

147 SOAP PLANT OBSERVER

151 NEWS

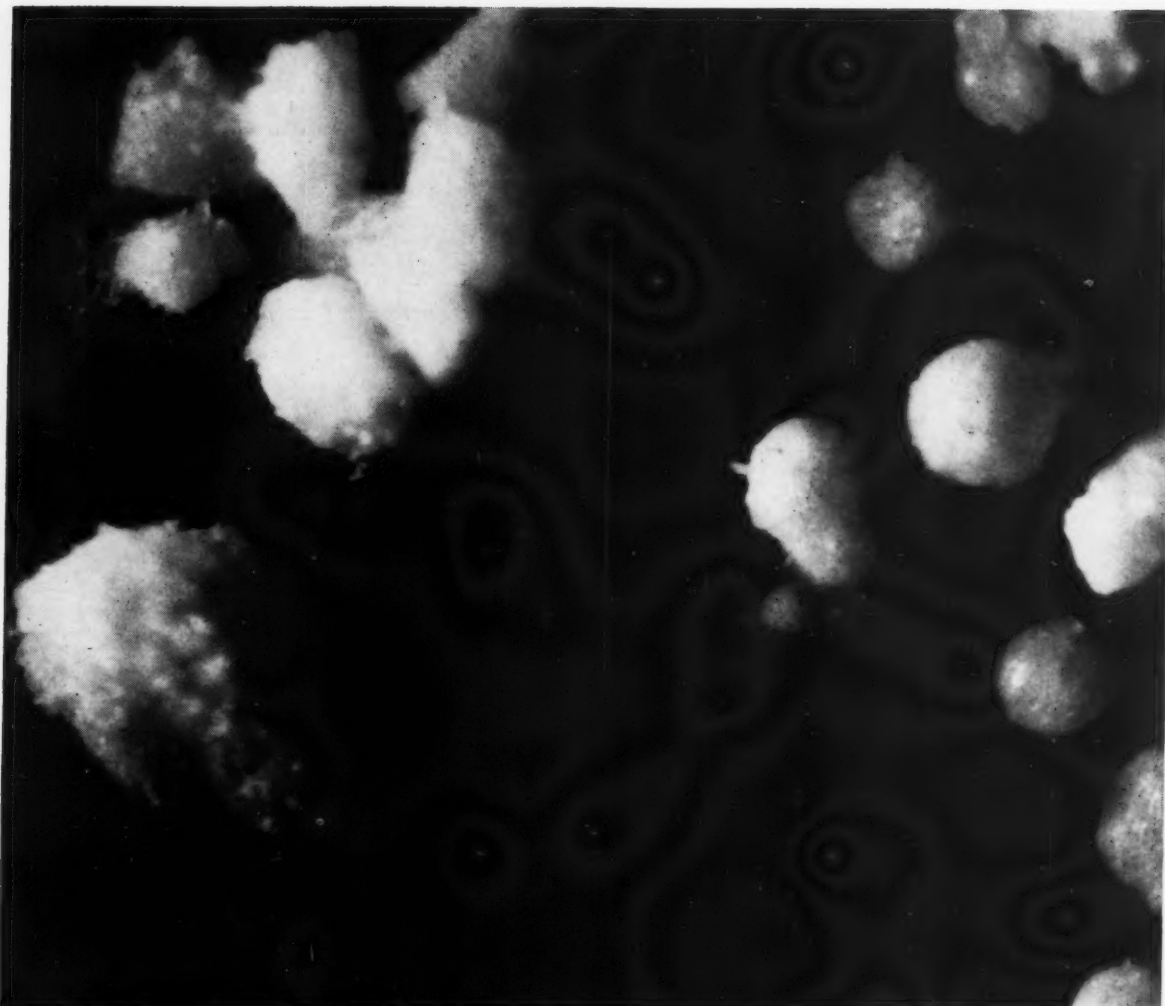
173 PROFESSIONAL DIRECTORY

175 CLASSIFIED ADVERTISING

181 MEETINGS CALENDAR

182 TALE ENDS

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Photomicrograph shows amazing bulking power of a granule of spray-dried phosphate (left) when compared with conventional form (right).

Photomicrograph shows how to add 30% more bulk to detergents with spray-dried phosphates

The phosphate on the left is spray-dried. It's 70% bulkier than the conventional phosphate on the right.

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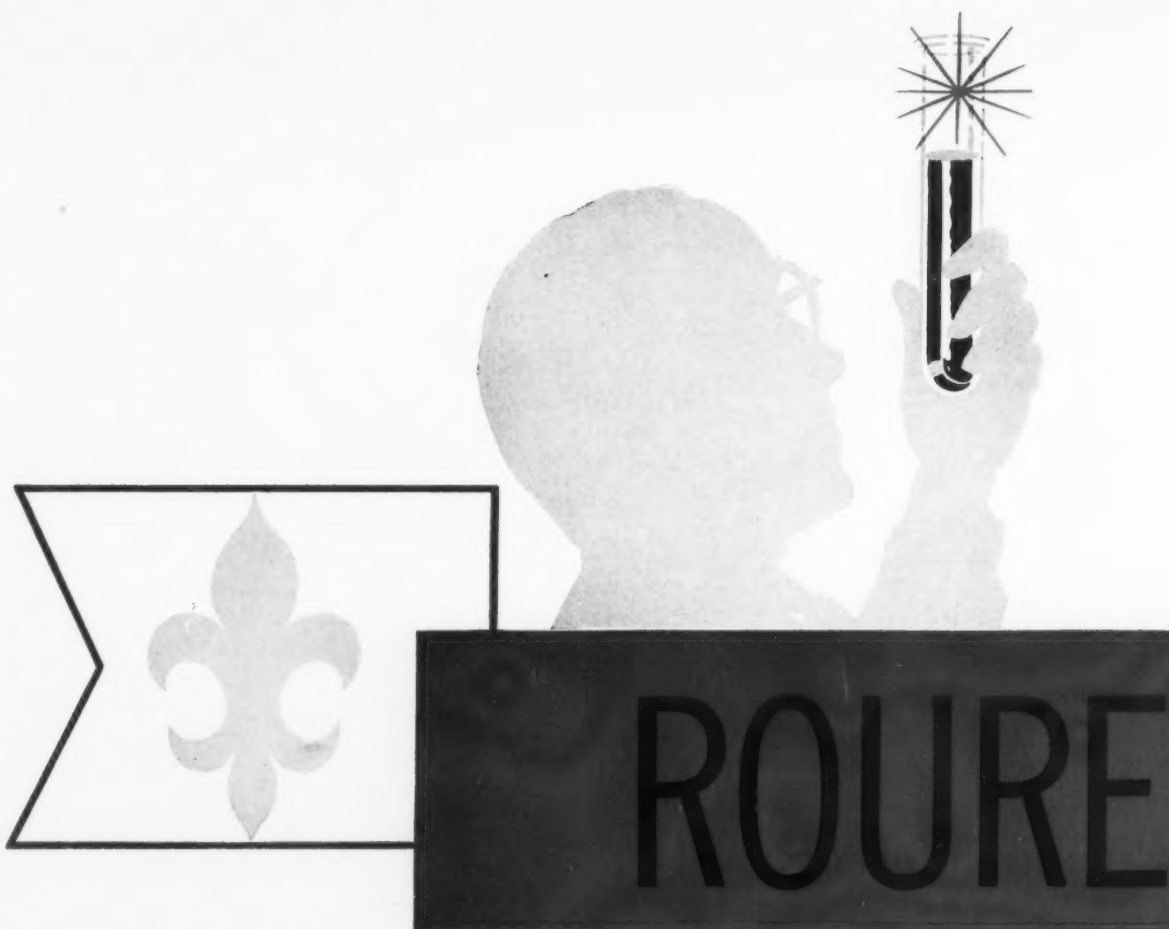
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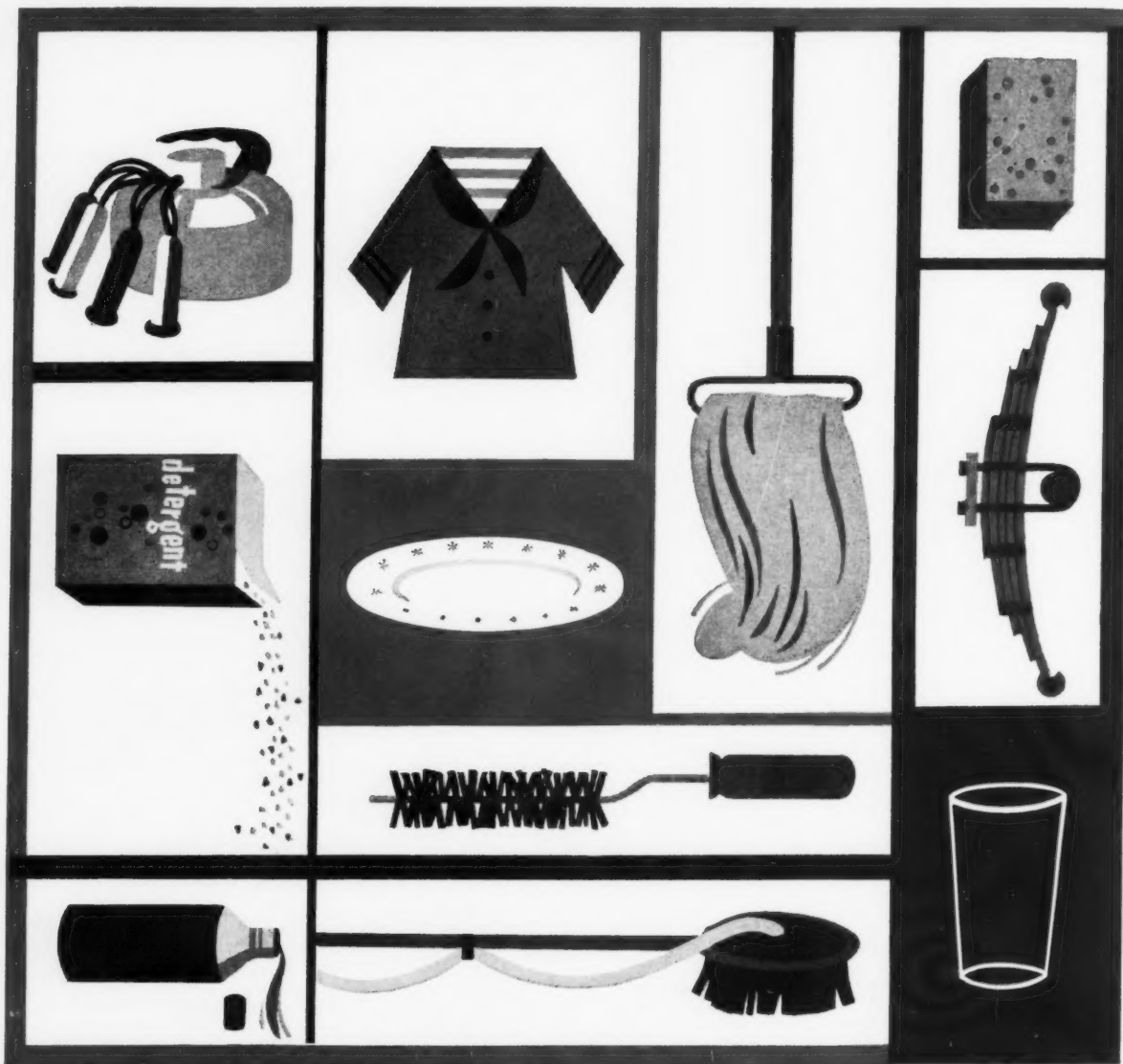


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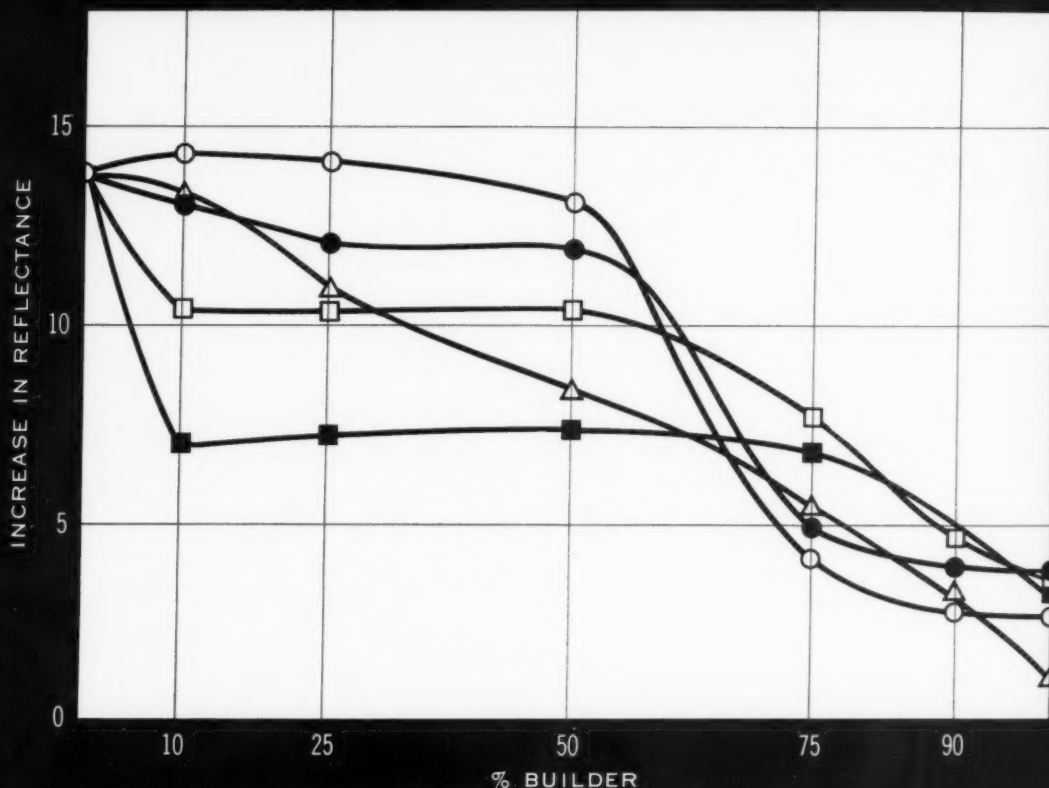
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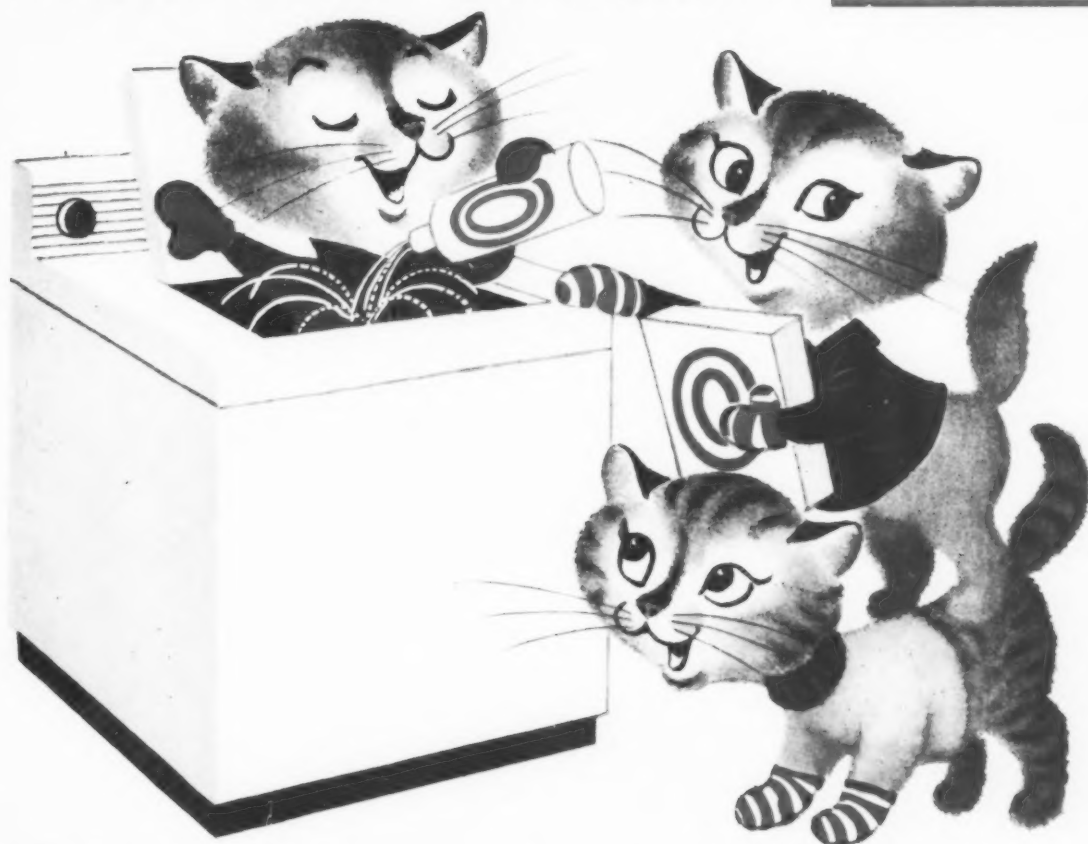
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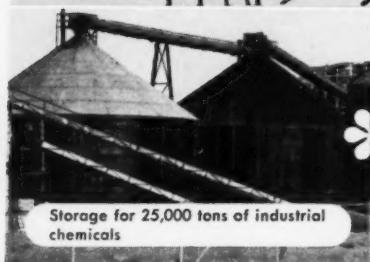
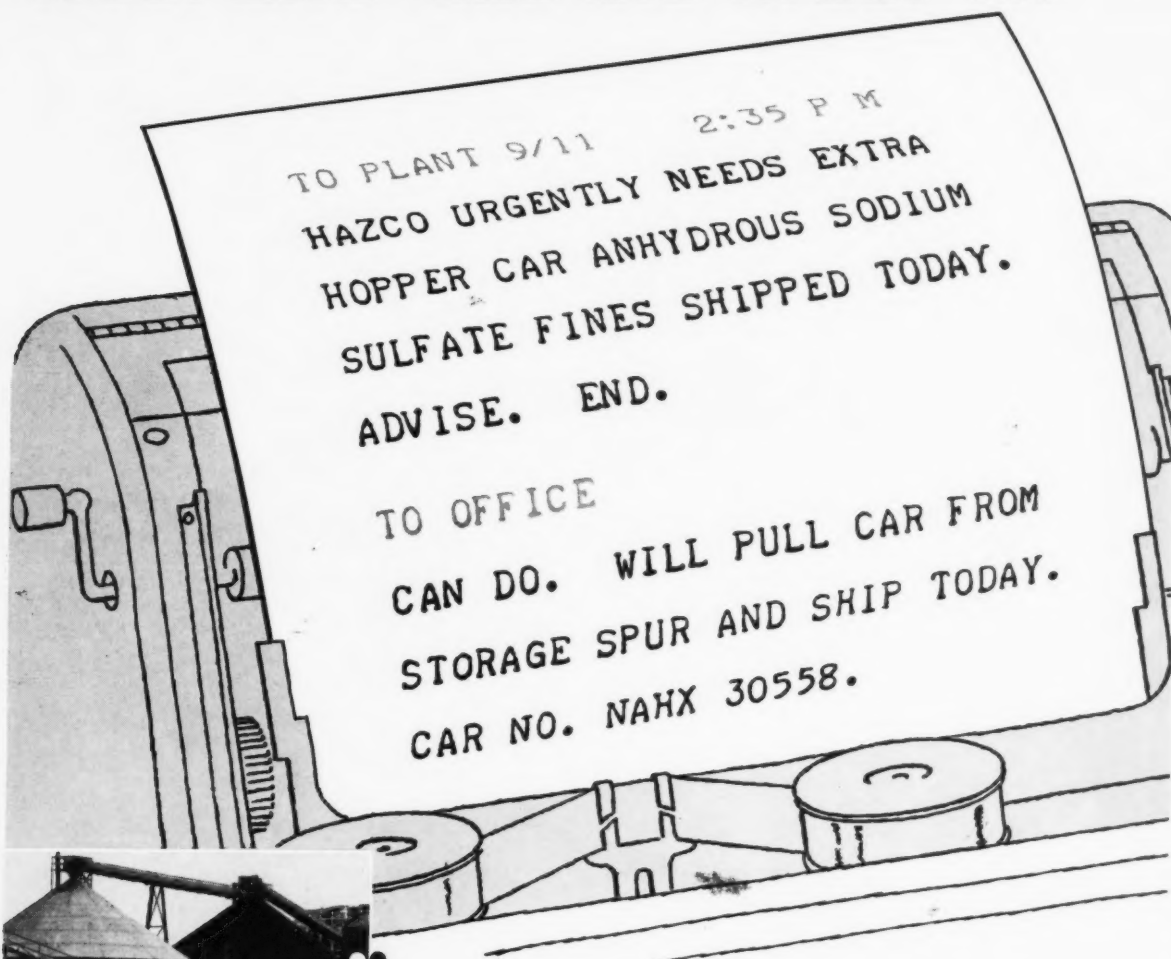
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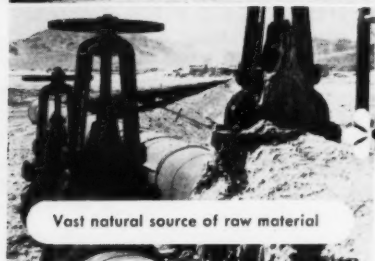
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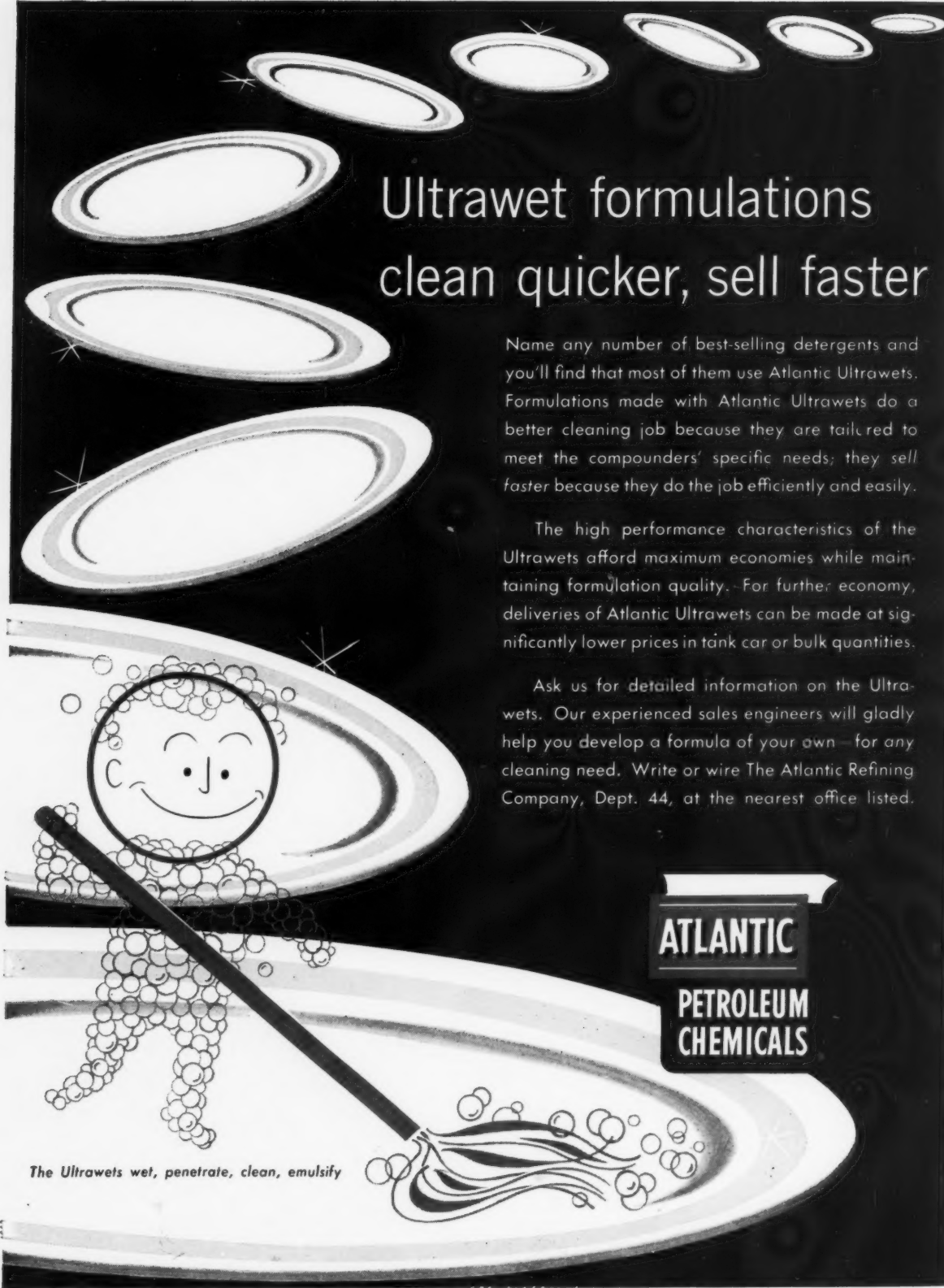
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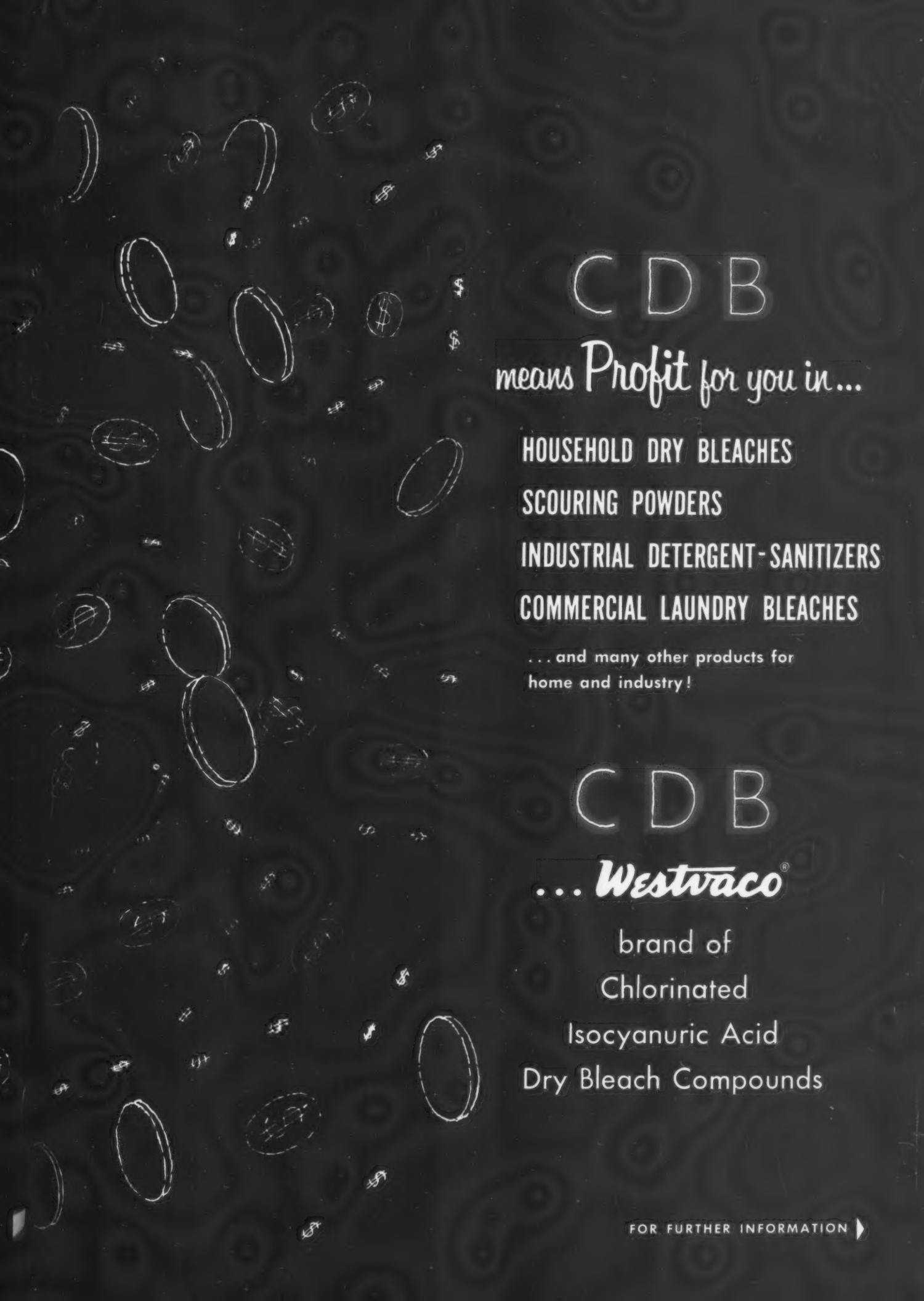
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After Closing

FDA Finds Aerosol Hair Sprays Safe

THE Food and Drug Administration revealed on Feb. 5 that pressure packaged hair sprays present "no problem of safety for the user." FDA, which is part of the U. S. Department of Health, Education, and Welfare, stated in a letter to the Chemical Specialties Manufacturers Association that "after numerous tests the Food and Drug Administration concludes that there is no problem of safety for the user" of resin type hair sprays. The letter was signed by John L. Harvey, Deputy Commissioner of FDA.

FDA says it specifically tested hair sprays containing:

1. PVP
2. PVP-PVA
3. DMHF
4. Shellac
5. Methacrylate
6. Lanolin

The agency said that its tests had showed these common ingredients of hair sprays to be essentially harmless in use.

This would appear to clarify the safety situation of hair sprays, which was called into question as the result of the publication of an article in the *New England Journal of Medicine* last March. The article, by three St. Louis doctors, indicated that hair sprays were responsible for certain lung conditions.

New Bon Ami Department

Bon Ami Co., New York, has established a new department to market an expanded line of Bon Ami products in 30 different sized packages to the institutional, industrial, maintenance, sanitary, government, and other non-grocery fields. John C. Holmes has been named director of marketing for the new division. He previously was associated with General Foods Corp., White Plains, N. Y., and

Market Research Corp. of America, New York.

The company also announced that it has entered into an agreement with National Cleaning Contractors, Inc., New York, and its affiliated firms whereby Bon Ami cleaning products will be used in the maintenance of more than 200 leading office buildings in four states.

Yardley Appoints Three

The appointments of a field sales manager and two regional managers for Yardley of London, New York, were announced last month by John F. Bales, vice-president — sales. Fred J. Fitzgerald, formerly assistant field sales manager, becomes field sales manager, and George Greaves and Eric Williams, previously sales representatives, are now regional managers.

With Yardley for 22 years, Mr. Fitzgerald had been manager of the New England territory. He was appointed to the firm's executive staff four years ago. He succeeds David J. Stewart who retired after 31 years with the company.

Mr. Greaves, who had covered the Rocky Mountain territory, is now responsible for the regional management of the 11 north central states area.

Formerly sales representative in Texas, Mr. Williams supervises sales in a nine-state area in the southeast. Mr. Williams won Yardley's 1958 sales contest. With Yardley for 29 years, Mr. Williams was awarded the President's Cup and a cash prize for his record sales in Texas. Runners-up in the fourth annual contest were William Showaker, sales representative in Pennsylvania, and Clarence Cooper, who handles the southern California territory.

Willemin Killed in Crash

Robert D. Willemin, newly appointed manager of the fats and oils department of Merrill Lynch, Pierce, Fenner & Smith, Inc., investment house, was killed in the Feb. 3rd plane crash at New York's La Guardia field, which cost 65 lives. His age was 33.

With Merrill Lynch since 1948, Mr. Willemin was a graduate of Harvard University. He lived in Cicero, Ill. In the Korean war he served as a lieutenant in the Navy. He leaves his widow, Ellen Ann, and four sons, Robert, Jr., Paul, John, and Anthony.

Cassady Estate Disclosed

Vinal Kena Cassady, former chief chemist for the old Palmolive Soap Co., who died Nov. 4, 1957, at 84 years of age, left an estate of \$150,487, according to an inventory filed last month in County Court, Milwaukee, Wis. Included in the estate were 721 shares of Colgate Palmolive Co., New York, valued at \$33,075.

Fred J. Fitzgerald



George Greaves



Eric Williams



Woolmington Retires

Edgar T. Woolmington, secretary and a director of Franklin Research Co., Philadelphia, resigned last month. A luncheon was held in his honor in the executive dining rooms of Philadelphia's Girard Trust Corn Exchange Bank on Jan. 28.

One of the founders of Franklin Research, Mr. Woolmington served as secretary-treasurer and a director since its incorporation in 1932. He resigned as treasurer early last year, continuing in an advisory capacity and as secretary and a director. The company manufactures and distributes maintenance products, industrial coatings, and cleaning materials.

Truax Joins Dura

Glenn E. Truax has joined Dura Commodities Corp., New York, where he is responsible for the importation and sale of "Palkena" products, a new, hard vegetable fat, Irwin R. Straus, president, announced in January.

Most recently engaged in the importation of cocoa beans and related products, Mr. Truax has been associated with General Foods Corp., and Nestle Chocolate Co., both White Plains, N.Y.

"Pharma-Palkena", a companion product of "Palkena", is used in cosmetics and pharmaceuticals.

"Six Month" Claim Charged

Continental Wax Corp., Mount Vernon, N.Y., has been charged by the Federal Trade Commission with misrepresenting the durability of its "Continental Grip-Kote Carnuba Six Month" floor wax which it sells and distributes.

In its television, radio, and newspaper advertising, the company claims that the product "protects and shines up to six months at a time with just occasional buffing!" Other claims state that it is "guaranteed not to walk away, wash away, wear away for six full months . . ." The commission

complaint alleges that the wax coating will not last for six months under ordinary circumstances as claimed in the company's advertising. Also cited in the complaint are the firm's officers, Lee Hall, Herbert Heller, and Jack Heller.

The parties were granted 30 days from the date of the complaint, which was filed Jan. 16, in which to file an answer. A hearing has been scheduled for Mar. 16 in Washington, D. C., before an F.T.C. hearing examiner.

Calo in Boys Club Post

Philip E. Calo, president of Philip E. Calo Co., Chicago, was recently elected vice-chairman of the Old Town Chicago Boys Club. The Calo firm is a sales representative for naval stores, resins, and oils, and Mr. Calo has been prominent for many years in the chemical specialties industry.

Gould to American Home

Bernard Gould has been appointed an assistant to the president of American Home Products Corp., New York, it was announced recently by Walter F. Silbersack, president.

Vice-president — sales and advertising for Associated Products, Inc., New York, for the past eight years, Mr. Gould also has been associated with the Gillette Co., Boston, and its division, the Toni Co., Chicago, as a director and as director of sales.

Bernard Gould



Plant Maintenance Show

An estimated 20,000 people visited the tenth annual Plant Maintenance and Engineering Show held Jan. 26-29 at the Public Auditorium, Cleveland. More than 400 exhibits displaying over 10,000 products were featured at the show which drew visitors from a wide variety of industries in this country and abroad.

A three day conference was conducted concurrently with the show. The opening session was devoted to the study of the maintenance system of a national manufacturing company. Subsequent sessions in the form of round-table discussions dealt with the maintenance problems of particular industries and general problems affecting all plants. Among the many topics discussed by guest speakers were preventive maintenance, sanitation objectives, maintenance procedures, and maintenance in small and large plants. There was a total of 51 conference meetings with 19 speakers.

Both the show and conference were produced by Clapp & Poliak, Inc., New York.

Johnson Expansion Plans

A \$4 million building program to be carried out by S. C. Johnson & Son, Inc., Racine, Wis., during the next two or three years was announced recently by H. F. Johnson, chairman, and H. M. Packard, president.

Among the first steps in the program are the construction of a manufacturing plant at Waxdale in Racine County, where Johnson's warehousing and shipping center is located. An expansion of research and development facilities at the headquarters in Racine is also planned. Additional manufacturing and warehousing facilities are to be built, too.

Mr. Packard credited increased sales and diversification in to non-wax products such as insecticides, air fresheners, and other chemical specialties, for necessitating the building program.

Lever Realigns Executive Set-up

MILTON C. MUMFORD has been elected president and chief executive officer of Lever Brothers Co., New York, succeed-

lever interests in North America and previously had maintained liaison with Unilever through a contact director. As board chair-



William H. Burkhart

ing William H. Burkhart, chairman of the board, who previously had held the dual position of president and chairman. Announcement of the executive realignment at Lever was made Jan. 30. Mr. Mumford was formerly executive vice-president of the company.

Mr. Burkhart continues as chairman but has added the responsibilities of board chairman of Lever Brothers, Ltd., Toronto, and Thomas J. Lipton Inc., Hoboken, N. J. He was recently elected to these two positions and later resigned as Lever president.

These three companies represent British and Dutch Uni-



Milton C. Mumford

man of all three companies. Mr. Burkhart replaces the contact director relationships. The individual companies continue to operate as separate organizations under the supervision of their respective presidents. Harry Greenway recently became president of Lever Brothers, Ltd., in Canada, succeeding C. A. Massey who retired Dec. 31 (see page 19, *Soap and Chemical Specialties*, January, 1959.)

Mr. Mumford joined Lever in 1951 as a vice-president and was elected executive vice-president the following year. Previously he had been a vice-president of Marshall Field and Co., Chicago, and gen-

eral manager of that company's textile manufacturing division, Fieldcrest Mills, New York. He became associated with the Marshall Field organization in 1935.

President of Lever Brothers since 1955, Mr. Burkhart has been with the company and its acquired interests for about 34 years. He was elected production vice-president three years later.

Shortly after his election, Mr. Mumford announced a series of management promotions including the election of two executive vice-presidents and four new vice-presidents.

Warren N. Burding and Henry M. Schachte, former vice-presidents, have been appointed executive vice-presidents. Mr. Schachte, who had been advertising vice-president, now supervises the company's three main divisions: Lever, Foods, and Pepsodent. He continues to supervise the corporate advertising staff and public relations division. Mr. Burding, previously marketing vice-president of the Lever division, supervises the company's production, research and buying operations as well as its two specialized marketing divisions in the armed forces and industrial fields.

Elected vice-presidents were Thomas S. Carroll, Robert McDonald, Samuel Thurm, and William T. French.

Mr. Carroll succeeds Mr. Burding as head of the Lever division. He formerly was general

Harry Greenway



Warren N. Burding



Henry M. Schachte



manager of the marketing services division. Mr. McDonald continues as head of the foods division of which he had been general manager. Mr. Thurm, previously general manager of the advertising services division, succeeds Mr. Schachte as advertising vice-president. Mr. French, formerly director of corporate development, heads the Pepsodent division, replacing T. E. Hicks, who continues as a vice-president assuming corporate staff duties.

Several advancements in its sales and marketing departments were announced recently by Lever Brothers, Ltd., Toronto, following the appointment of Harry Greenway as president. Mr. Greenway, former vice-president—marketing, succeeded C. A. Massey at the end of last year. Joining Lever in England in 1933, he served in various marketing posts in Europe before coming to Canada in 1951.

R. G. Spence has been appointed marketing director and was elected a director. Most recently general sales manager, he has been a member of the marketing division staff since 1948.

Succeeding Mr. Spence is Peter G. Townley who was Ontario division manager for the past three years. Homer D. Keith replaces Mr. Townley as Ontario division manager. He had been division manager of the Prairie sales division. A. B. Rattray, former supervisor of chain store sales in the Ontario sales division, succeeds Mr. Keith.

Also announced was the election of Ray Collett, director of advertising, as a member of the board of directors.

— ★ — **Sinclair Changes Name**

Sinclair Chemicals, Inc., New York, has changed its name to Sinclair Petrochemicals, Inc., it was announced last month by John A. Scott, president. All personnel, offices, and operations remain unchanged. The company is a wholly owned subsidiary of Sinclair Oil Corp.



Group of stock designs in various capacities of new plastic-coated glass pressure packages announced early this month by Owens-Illinois Glass Co., Toledo. O-I has developed a new technique for the manufacture of these bottles, which are being produced at the company's Fairmont, W. Va., plant. Bottles can be used to carry products propelled by either liquefied or compressed gases. O-I says it is prepared to produce pressure packages within prescribed limits in a variety of shapes, sizes and a wide range of brilliant stock, as well as individual colors or plastic coating attractively printed in one or two colors.

P&G Earnings Increase

Consolidated net earnings of \$34,116,942 for six months ended Dec. 31, 1958 were reported late in January by Procter & Gamble Co., Cincinnati. These earnings amount to \$2.09 per common share compared with \$1.79 per share for the same period in 1957.

Current earnings represent a 17 per cent increase over the \$36,651,383 which was reported in 1957. Provision has been made in the six months reported for U. S. and foreign income taxes of \$41,384,000.

— ★ — **New Phosphate Plant**

Plans to construct a sodium tripolyphosphate and tetra-sodium pyrophosphate plant at Carteret, N.J., were announced last month by American Agricultural Chemical Co., New York.

According to F. R. George, vice-president—chemical sales, the new unit will utilize phosphorus produced from the company's phosphate reserves in Florida. He pointed out that plans for the plant mark a further step in A.A.C.'s expansion and diversification of its chemical operations.

The company produces "Agrico" fertilizers and "AA Quality" chemicals and is said to be a

pioneer producer of elemental phosphorus in the United States.

— ★ — **Diversey Adds Subsidiary**

Diversey Corp., Chicago, has acquired a subsidiary in Italy Herbert W. Kochs, board chairman revealed recently. The acquisition is the sixth in the company's worldwide expansion program and brings the total of subsidiaries and affiliates operating outside the United States to nine.

Known as Diversey Italiana, S. P. A., the new subsidiary was formed in partnership with Italian and French interests and will maintain its headquarters and factory in Milan. Detergents will be manufactured to U. S. specifications.

Associates in the enterprise are Fabbrica Prodotti Chimici, Dott. V. Sacco of Milan and Saint Gobain, Chauny and Cirey of Paris.

— ★ — **Stull of Hercules Resigns**

Philip B. Stull, a vice-president and director of Hercules Powder Co., Wilmington, Del., and a member of its executive committee, resigned last month. With the company for 35 years, Mr. Stull continues as a special assistant to A. E. Forester, president, until his early retirement under the company's pension plan.

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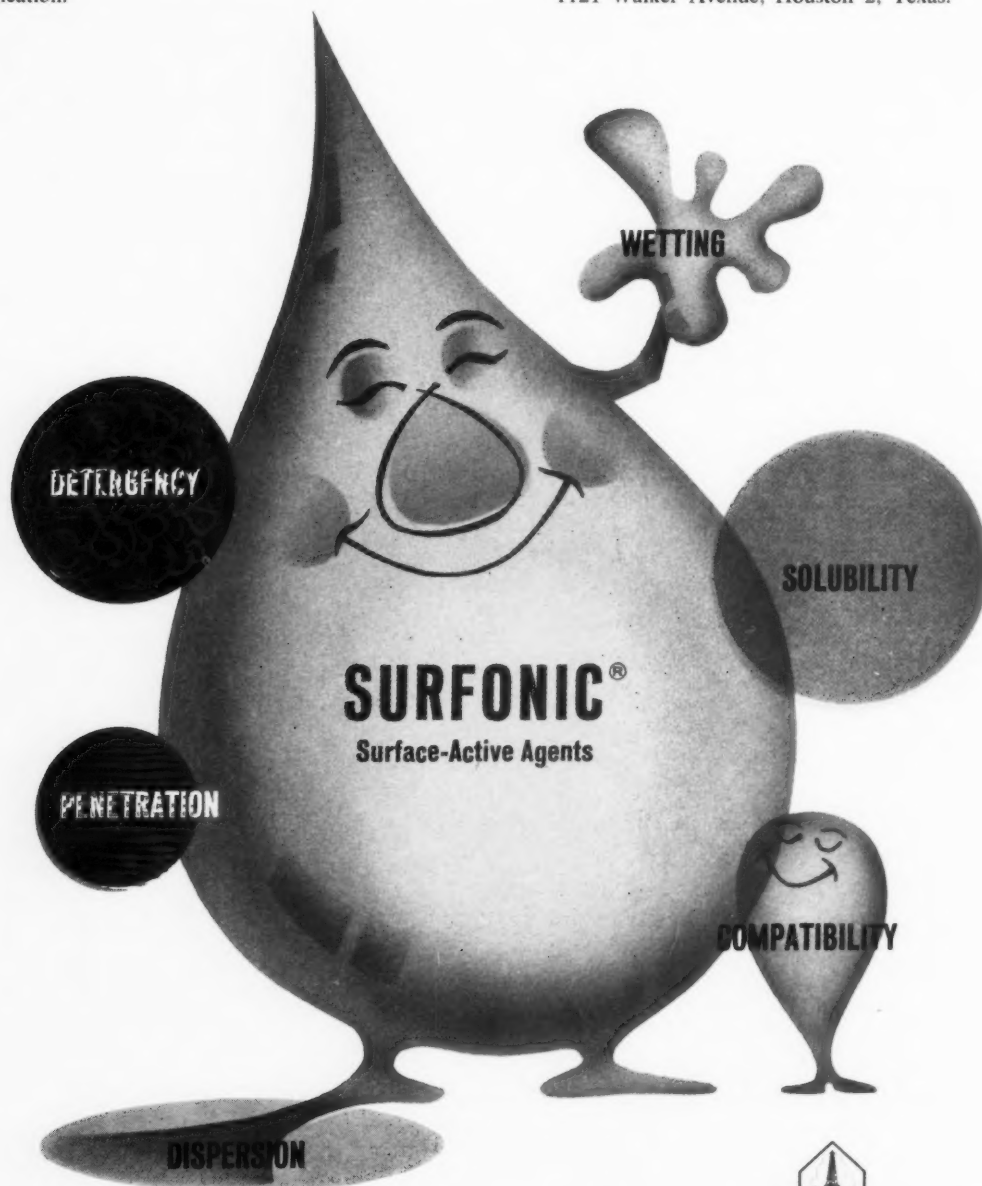
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109

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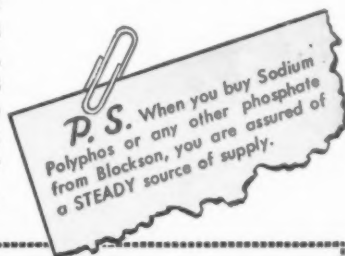
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The ability of Sodium Polyphos to sequester hardness elements in water, prevent soap curds, disperse solids finely (as clays in paper coating, muds in oil drilling) may suggest applications for your own processing. If so, please request a test sample with your technical

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Solid 90% and 85%	Solid 85%
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7 Ways to buy Nialk Carbonate of Potash

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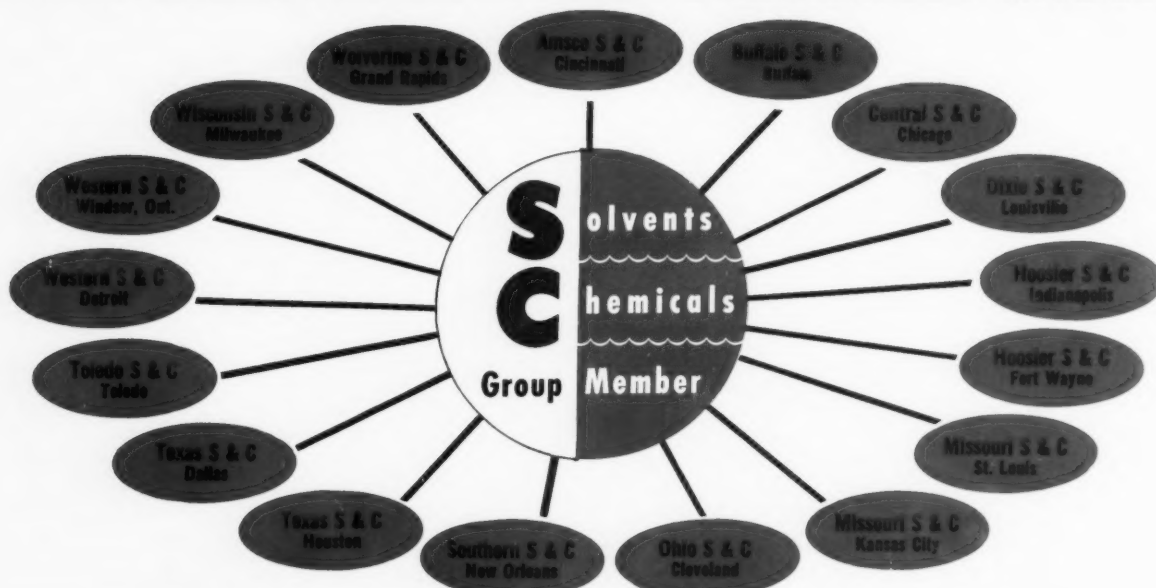
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If you haven't reviewed your caustic supply situation lately, this would be a good time to do so. Look into Westvaco Caustic today!



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SOAP and CHEMICAL SPECIALTIES


... in brief

as the editor sees it . . .

 **REPELLENTS . . .** Some chemical specialty manufacturers who have looked into the market for insect repellents have concluded that potential business is not large enough to warrant a foray into this field. As things stand today, maybe they are right. Maybe there is not room marketwise for three or four nationally advertised repellents. Although who is to say that backed with aggressive advertising the entire market might not be expanded materially?

Potentially, we believe that the market holds much promise. The living habits of the American people are changing. More leisure and more outdoor living are keys to the future of the repellent market, we believe, for human beings. But there are also other markets, live stock and industrial, to name a couple. High cost of raw materials, however, might postpone any real development of these latter for the time being. As a whole, we are among those who believe that eventually the market for repellents is going to be a large one which will rival in sales the totals for household and industrial insecticides.

* * * * *


 **NEW LAWS . . .** Already 43 state legislatures, including our latest addition, Alaska, are in session. These state legislatures abound with eager beavers who are intent upon protecting their homes and happiness. As far as the chemical specialties, toilet goods and soap manufacturer is concerned, precautionary labeling is the hot legislative subject. New laws to legislate common sense into the heads of careless housewives, mothers and others are bound to come forth in profusion. New laws to hamstring manufacturers and to call for a multiplicity of label requirements will descend upon us.

If only state legislators, and some of those in Washington as well, would not be swayed by newspaper stories, would not accept inexpert

opinion as fact, would not play to the grandstand, how simplified would become the legislative problem. If those who have or are about to introduce precautionary labeling laws would first consult the experts, the trade associations who are deeply concerned with this matter, they would find that a model law of this type already exists. They would find that it is a consensus of expert opinion, the opinion of top men who labored hard and long to compile it.

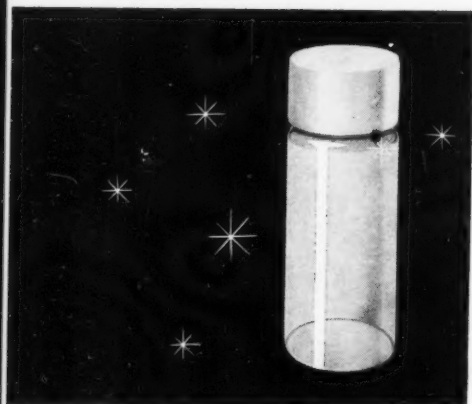
The sane level-headed legislator, we do not fear. It is the uninhibited eager beaver who worries us, the fellow who could be responsible for forty laws in 49 states, all different. But this is 1959, an odd numbered year, a "big state legislative year." We can be ready for almost anything.

* * * * *

 **DETERGENT BARS . . .** Detergent toilet bars are now classified as cosmetics by the Food & Drug Administration and as such come under the provisions of the Food, Drug & Cosmetic Act. Toilet soaps are specifically exempted from the provisions of this law. And by classifying synthetic toilet bars as cosmetics, FDA also made them automatically subject to the 10 per cent Federal excise tax on cosmetics. So, from the carefree life of a toilet soap, the synthetic bars suddenly find themselves encompassed by special labeling, possibly excise taxes, and their factories subject to FDA inspection.

That the manufacturers of synthetic bars are not taking this FDA ruling lying down goes without question. Obviously they will fight it. In the meantime, the relative market position of ordinary toilet soap is strengthened materially. The firm grip of soaps on the body washing market becomes stronger than ever. And at a time when, we have a hunch, the synthetics were not doing as well as might be expected. In our humble opinion, they still have a way to go to

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... except price*



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OLEIC ACIDS**

Emersol 233 LL Elaine, with its 5% maximum polyunsaturants content, is just a little better than other oleics in *many* critical performance characteristics. But together, these differences can add up to a significant improvement in your product performance—lighter color, blander odors, and unmatched resistance to deterioration by aging.

And, since Emersol 233 is competitively priced, it costs you no more to provide *your* products with these competitive edges at the sales level.

Fatty Acid Sales Department

Vopcolene Division, Los Angeles—Emery Industries (Canada), London, Ontario



Carew Tower, Cincinnati 2, Ohio

Industries, Inc.

Export Department, Cincinnati

meet and beat present-day toilet soaps in a nose-to-nose competitive battle. Toilet soaps are just too good.

If synthetic toilet bars are ever going to take over completely the toilet soap markets of the world, as has been freely predicted by more than one expert, this ruling of FDA could help to postpone that occasion. And a further improvement in the quality of the synthetics will have to come in the meantime.

* * * * *

WRONG WAY . . . The number of people who will point a pressure package the wrong way and squirt themselves in the eye is quite amazing. But we have seen this demonstrated on any number of occasions. Some valves by their structure show the proper direction for use. Others do not and are in fact something of a puzzle to experienced aerosol users. A close examination is necessary to determine which way the stuff is going to spray when the button is pressed. And a squirt in the eye does not make for friendly relations with a new product.

Although the structure of some valves does not permit a prominent direction marker, nor do costs, we feel that this is more important than the average valve or product manufacturer may believe it to be. The user who must be assumed to be a first-rate dumb cluck, should not be permitted to make a mistake. First thing we know some crook with an energetic lawyer is going to step up and claim that he or she was temporarily blinded by a spray of room deodorant or hair spray,—and that his or her eyes have been permanently injured and a loud scream for damages will be heard. Mark it down in your little black book. It can and will happen.

* * * * *

CENSUS . . . The Census of Manufacturers for 1958 supposedly is about completed as far as filing reports by manufacturers and others is concerned. The last prior census covered the year, 1954. Forms were sent to all firms employing paid personnel during 1958. These forms were returnable within 30 days to the Bureau of the Census. Because of the wide variation in manufacturing, the Bureau prepared and sent out over 200 different forms to 450 industries. Now, all they have to do is to

analyze and compile the figures. With reports from almost 300,000 manufacturing establishments, this is quite a job even for the statistically minded Census Bureau.

Often, we have wondered how accurate are the finally compiled figures and just how much help they really are to American industry and business. Specifically, what purpose do they serve? Yes, they tell us the size and scope of our various industries, but if they are inaccurate, may they not mislead? And what assurance do we have of the accuracy of the figures? None that we know of. Certainly, we know that correct and prompt answers are compulsory under the law. We know that the figures are *supposed* to be accurate. But, are they? Our own observations over the years are that sometimes they err, invariably on the low side which we feel indicates incompleteness.

Nevertheless, we hope that all our good friends have filled in and returned Form MC-28G which covers "Soaps, Polishes and Related Products." We remind them that their figures are treated in complete confidence,—and also that filing a return is mandatory under the law.

* * * * *

TECHNICAL DATA . . . The situation really can become ludicrous when a salesman with little or no technical education or training explains the scientific side of his product to a potential buyer who hasn't the remotest idea what he is talking about. But it happens every day. Companies give their salesmen an alleged technical briefing and turn them loose on the poor unsuspecting customer. If the salesmen are not technically educated, they can sound off with a lot of pseudo-scientific nonsense. This may or may not impress the buyer. If the buyer, however, happens to be a technical man, he is either amused or puts the salesman down as a first class dope. In no case is the end result good.

Often we have felt that many companies go overboard in putting across the idea to the customer that their product is of highly scientific origin. They overload their salesmen with technical data which the salesmen may completely misuse to the detriment of a firm's reputation. It gives the salesman the perfect opportunity to make an ass of himself.

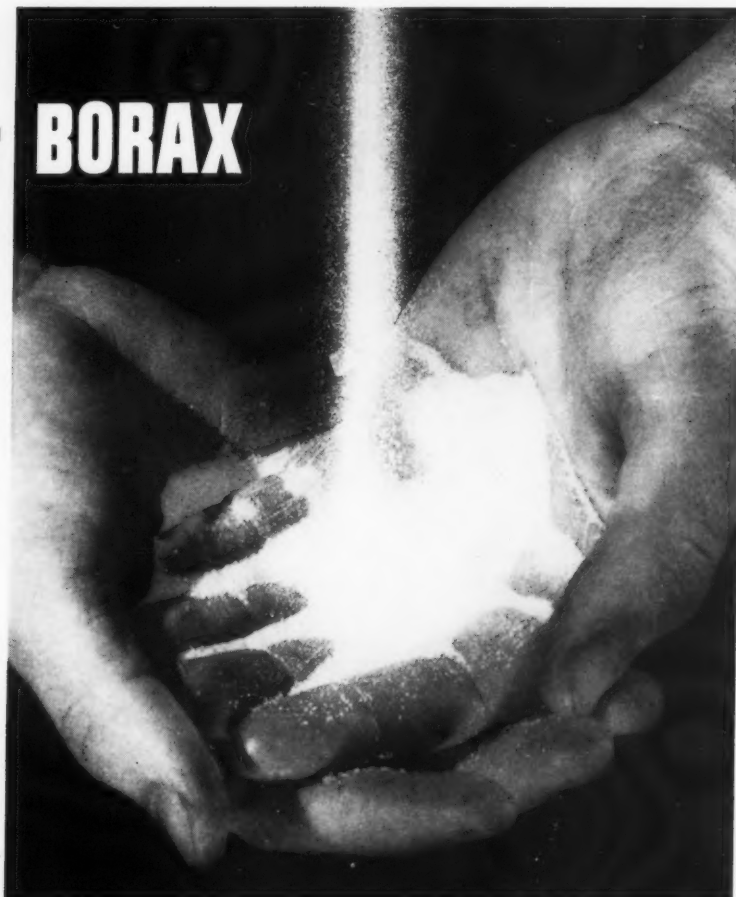
Granular BORAX

IN SPECIAL

UNIFORM MESHES

IN A VARIETY OF

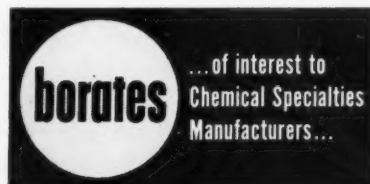
GRAIN SIZES



Borax boosts the efficiency of powdered hand soaps and cleansers.

Many makers of powdered soaps add *Borax* to improve cleansing action. Borax helps cut grease and dirt quicker—makes powdered soap work better in any water. Would you like to know more about borax? As the largest producer of borax in the world, we've done much research that may be of help to

you. If you are already using borates, our recently increased production and refining facilities assure you of adequate supplies of borates in every form for every possible use. We'll meet your specifications with quality that is consistently high. May we send you samples of the borates you need?



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SODIUM METABORATE
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as the reader sees it . . .

Promotion Undeserved

Editor:

In printing my letter on "pine oil" on page 43 of the December issue of *Soap and Chemical Specialties* you graciously promoted me to a past chairman of the Scientific Disinfectant Committee of the NAIDM.

Much as I appreciate the gesture, this honor is undeserved since I was only one of the working members, and so stated in my letter. The chairman at that time was C. L. Weirich of C. B. Dolge Co., one of the real specialists in that field.

William H. Sachs,
Consultant,
Atlanta, Ga.

Wasn't it the Disinfectant Scientific Committee? Ed.

Lurid, Eh?

Editor:

At the risk of appearing picayune, but in the hope of performing a friendly and useful service, I would like to point out that the "nuclear detergents" referred to on the front cover of the October, 1958 issue of *SOAP & CHEMICAL SPECIALTIES*, logically would be detergents for cleaning nuclei. It seems to me that a scientific periodical of the caliber of *SOAP & CHEMICAL SPECIALTIES* ought to avoid the pitfalls of lurid journalism.

William C. Duckworth,
Atlanta, Ga.

As we pointed out in a letter replying to Mr. Duckworth: "Sometimes we achieve some peculiar effects when trying to fit a piece of writing into a set amount of space. Also, we do try to entice the reader a little into reading what we think is an important or particularly interesting article. Thus, 'nuclear detergents.' However, by the same token, when we say 'synthetic deter-

gents' do we mean products for washing synthetics?"

"... the word 'lurid' in the second edition of Webster's International Dictionary . . . (is) defined (in) the applicable meaning of the word (as): 'Harshly or ominously vivid; grimly terrible; often marked by violent passion or crime; as a lurid life, story.'

"We consider *SOAP* to be a business magazine, or at most, a technical publication, definitely not 'a scientific periodical.'"

"Class in semantics dismissed for today." Ed.

Mr. Duckworth then replied to our letter as follows: "As an old semanticist, I am somewhat abashed at my misuse of the language which you exposed in your letter . . . I am convinced, however, that contemporary journalism has been infected by the Time virus, and this is a condition to which I am

opposed." Signed William C. Duckworth.

Sprayer Correction

We noticed an article dealing with the sorting and application of spray assemblies on page 163 of the December issue of *Soap & Chemical Specialties*, and hasten to correct what seems to be rather misleading information.

We did design a machine for the Kan-Jax Chemical Co. that incorporated a stub chute only, to which they attached an intake conveyor that carried the spray tops with the long dip tubes to the head of our chute, down which they slid and were carried around, picked up, inserted and tightened on to the bottles.

The important correction we are attempting to make is to advise you we do not automatically sort the sprayers, although it is obvious this is an operation we would certainly like to accomplish and have spent some time and effort in solving. It does happen to be a very difficult one and so far

(Turn to Page 177)

NEW USE FOR DETERGENTS: Display at last month's Soap Assn. meeting in New York shows interesting results produced by mixing one part of household detergent with two parts of tempera (poster) paint. Paintings done with this combination resemble oil paint in appearance and feel. Detergent acts as thickening agent and gives tempera more flexibility and body. This technique is being introduced in primary and secondary schools throughout the U. S., and is being tested by painters at Art Students League of New York.



From PROCTER & GAMBLE... a complete catalog of versatile formulation products for your every soap or detergent need!



Kyro A neutral nonionic synthetic detergent of the 100% alkyl-phenol ethylene oxide condensate type. A light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer detergents, self emulsifying solvents, laundry detergents, glass, textile and dairy cleaners, insecticides and bottle washing compounds.



AMBER GRANULES. A neutral 88%, 42° titer-type soap of exceptional purity and uniformity. Well suited for the preparation of paste or gel-like products because of its high titer. Its granular form makes it ideal for powdered products. Excellent for the preparation of hand cleaners, paste cleaners, polishes, lubricants and coatings.



ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified alkyl sulphate. Offers exceptional efficiency and stability over a wide range of operating conditions. Wetting, penetrating, sudsing, dispersing and emulsifying properties make it excellent for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.



AB GRANULES. A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulphonate type. A white product that can be used effectively in the blending of bubble baths, car washes, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.



WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium alkyl sulphate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste and liquid shampoos, bubble baths, liquid detergents, liquid car washes, liquid floor cleaners, insecticides, glass cleaners, rug and upholstery cleaners.



IVORY BEADS. A medium titer, neutral white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, dishwashing compounds and paper coatings.



K LIQUID. A modified, highly concentrated ammonium lauryl sulphate—modified for increased sudsing and mildness. Exceptionally low cloud and pour points. Highly fluid and easy to handle. Ideal for clear liquid shampoos and liquid detergents where high foaming is required.

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Detergents... Cleansers... Soaps...

N. L. Gianakos, left, Shell Chemical Corp., and chairman of Glycerine Research Committee, presents plaque to Dr. Leo A. Goldblatt of U. S. Dept. of Agriculture, who with Dr. Robert S. McKinney, also, U.S.D.A., won top honors in competition sponsored by Glycerine Producers Assn. Awards were presented during annual Soap Assn. meeting in New York Jan. 20. Details in article beginning on page 45.

Aerosols
Detergents
Dishwashing compounds
Floor scrubs
Glycerine
Hand cleaners
Laundry soaps
Liquid soaps
Metal cleaners
Potash soaps
Scouring cleansers
Shampoos
Shave products
Soap powders
Starch
Steam cleaners
Medicinal soaps
Textile detergents
Toiletries
Toilet soaps
and other detergent
and soap products

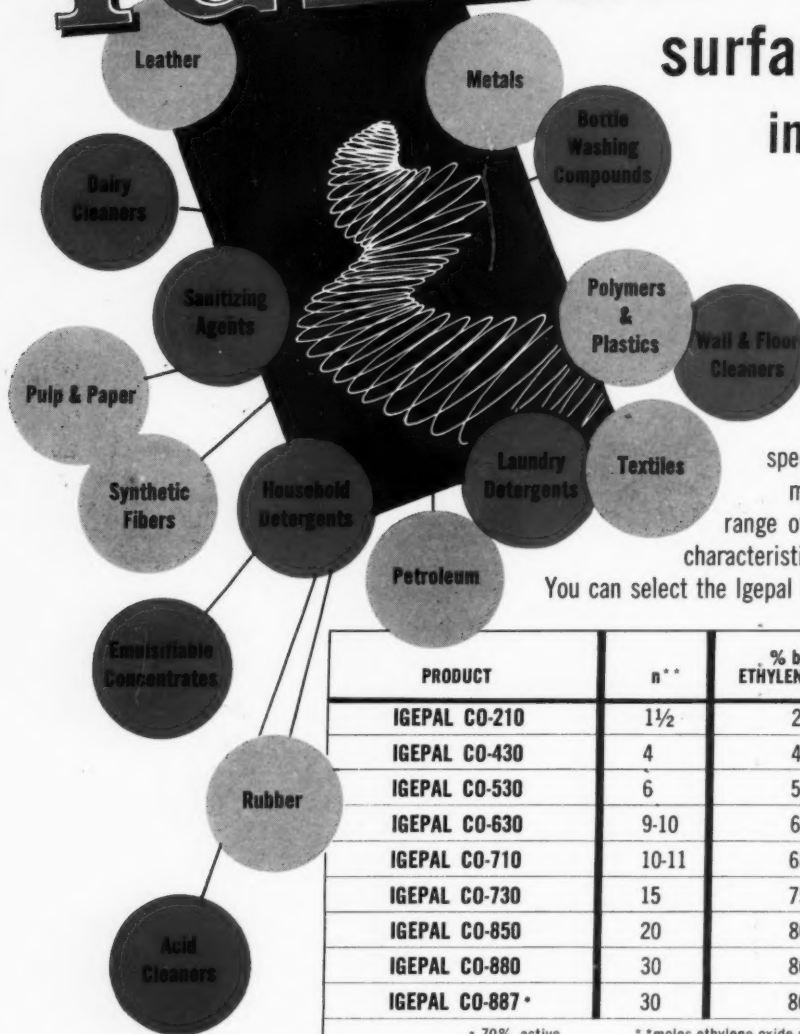


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IGEPAL® CO

surfactant

in your product •
or process •



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You can select the Igepal CO best suited for your requirements.

PRODUCT	n **	% by wt. ETHYLENE OXIDE	CLOUD POINT 1% SOLUTION
IGEPAL CO-210	1½	23	insoluble in water
IGEPAL CO-430	4	44	insoluble in water
IGEPAL CO-530	6	54	insoluble in water
IGEPAL CO-630	9-10	65	126-133° F
IGEPAL CO-710	10-11	68	158-162° F
IGEPAL CO-730	15	75	203-212° F
IGEPAL CO-850	20	80	clear at 212° F
IGEPAL CO-880	30	86	clear at 212° F
IGEPAL CO-887 *	30	86	clear at 212° F

* 70% active

** moles ethylene oxide per mole nonylphenol

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Igepal CO surfactants manufactured by General Aniline & Film Corp. are sold outside the United States and Canada under the tradename "Antarox CO" by distributors all over the world.



Newly elected officers and directors of the Association of American Soap & Glycerine Producers at their first meeting during the 32nd annual convention of the organization in New York, Jan. 22. From left to right, seated: Treasurer, Nils S. Dahl, John T. Stanley Co.; director, Howard J. Morgens, Procter & Gamble Co.; director, T. G. Hughes, Oronite Chemical Co.; reelected president, A. K. Forthmann, Los Angeles Soap Co.; secretary, Roy W. Peet, manager, Soap Association; K. R. Fitzsimmons of Shell Chemical Co., representing G. W. Huldum, Jr., a director; vice-president for the east, W. H. Burkhart, Lever Brothers Co.; J. M. Hoerner, Armour & Co., who acts as alter-

nate for F. B. Patton of Armour, a director; director, J. L. Jones, Sugar Beet Products Co. Standing, l. to r.: vice-president for middle west, A. W. Schubert, Emery Industries, Inc.; director, E. B. Osborn, Economics Laboratory, Inc.; director, J. L. Christian, Monsanto Chemical Co.; director, F. B. Patton, Armour & Co.; director, M. B. Loeb, Brillo Manufacturing Co. and director, W. O. Robertson, A. Gross & Co. Missing from photograph are vice-president for the west, A. C. Pelletier, Purex Corp.; assistant treasurer, M. A. McManus, Lever Brothers Co., and R. A. Hart, Colgate-Palmolive Co., a director.

Soap Assn. Reelects Forthmann

ONE of the largest conventions ever to be held by the soap and detergent industry took place at the Waldorf-Astoria Hotel, New York, Jan. 20, 21 and 22. Soap and detergent manufacturers and/or marketers came from far and near to hear at first hand of new developments in components and of trends in fields in which detergents are employed. There were panels a plenty for the 32nd annual meeting of the Association of American Soap & Glycerine Producers and its affiliated Industrial Division, Fatty Acid Division (Fatty Acid Producers Council) and Glycerine Division. The five panels, on subjects ranging from the use of fatty acids in soaps and detergents to packaging and alkyl resins, probably helped to establish another record: most papers at one meeting.

In spite of a program that was different in approach and content, the association found time to

reelect all of its officers including Andrew K. Forthmann, president of Los Angeles Soap Co., who served as AASGP president in 1958. Three new directors were elected: T. G. Hughes, Oronite Chemical Co., San Francisco; W. O. Robertson of A. Gross & Co., New York, and J. L. Jones, Sugar Beet Products Co., Saginaw, Mich. Names of the other directors and officers appear in caption beneath cut above. Another highlight of the meeting was a "hushed audience" address at luncheon Jan. 21 by Gen. Lucius D. Clay, who predicted that the U. S. will stand firm over Berlin and "meet force with force." Gen. Clay served as military commander of Berlin during the first blockade and "Air-lift." He is currently chairman of Continental Can Co.

Some facets of the "Race for Space" were explained by John Dille, military editor of Life magazine at the Jan. 22 luncheon. Mr.

Dille's presentation included a film on the launching of a missile ("bird") at Cape Canaveral, Fla.

Three awards for outstanding new and independent research contributing to knowledge of glycerine and its derivatives were presented on Jan. 20. The first award of \$1000 and an honor plaque went to Drs. L. A. Goldblatt and R. S. McKinney of the Southern Utilization Research & Development Division, U.S. Dept. of Agriculture, New Orleans, for their work on synthesis and examination of the unique physical properties of tung oil monoglycerides.

Dr. Dymtro Buchnea, assistant professor of chemistry at the University of Toronto, received the second award of \$300 and an honor certificate. He has done extensive research on the analysis, synthesis and chemical structure of unsaturated glycerolphosphatides and related compounds, natural derivatives of glycerine found in



Packaging panel, top, left to right: Walter Landor, Walter Landor & Associates; J. M. Cullinan, Reynolds Metals Co.; F. W. Schreiber, Lever Brothers Co., moderator; Anthony J. Dragonette, Union Carbide Plastic Co. and Bernard J. McKernan, Continental Can Co.

Lower photo is of participants in symposium on alkyd resins. Shown left to right are: Thomas F. Mika, Shell Development Co.; James R. Eizner, Amoco Chemicals Corp.; Joe N. Butler, Monsanto Chemical Co.; Edward G. Bobalek, Case Institute of Technology; Marvin W. Formo, Archer-Daniels-Midland Co.; J. Scott Long, Paint Research Institute, and Herman J. Lanson, U. S. Vehicle & Chemical Co.

the tissue of living cells.

The third award went to the director of chemical research of the Tile Council of America, Dr. Herman B. Wagner, for the development of an improved glycerine-containing mortar for setting ceramic tile. Dr. Wagner was given a \$200 award and honor certificate for his work which is said to have simplified tile setting in the U. S. Conventional mortars used prior to Dr. Wagner's research presented serious problems of fast setting at the high temperatures encountered in normally warm climates and during summer months. With glycerine as an additive, the working time of the mortar has been extended by almost 30 minutes.

Of course there was the Maid of Cotton fashion show, on Jan. 21, at which time this year's

maid, Miss Malinda Berry, introduced her all-cotton wardrobe. The annual banquet and floor show spiced the social program which also listed the True Story convention breakfast and the cocktail party of *Soap & Chemical Specialties* magazine.

Industrial Div. Meets

Lead-off event of the convention was a meeting of the Industrial Division the morning of Jan. 20, with Earl Brenn, Huntington Laboratories, Inc., division chairman, presiding. Election of officers followed a brief business meeting at which the division's 1958 budget and expenses were explained. New officers of the division's steering committee include:

J. L. Jones, Sugar Beet Products Co., Saginaw, Mich., chairman, and

Howard Young, Davies-Young Soap Co., Dayton, O., vice-chairman. Other members of the steering committee include: Mr. Brenn; John D. Moore, Twenty Mule Team Products Division of U. S. Borax and Chemical Corp., New York; Leonard Oppenheimer, West Chemical Products, Inc., Long Island City, N. Y.; G. H. Packwood, Jr., Packwood Manufacturing Co., St. Louis; F. J. Pollnow, Jr., Vestal, Inc., St. Louis; and Edward Randa, Armour & Co., Chicago.

Henry T. Rockwell, president of Jones, Brakeley & Rockwell, Inc., New York public relations firm, presented a nine point publicity report to the membership. He reviewed the division's publicity activity during the past year and included suggestions for the future.

Highlights of the publicity program were the establishment of a New York Dermatitis Workshop in which the division cooperated with various commerce and trade associations in New York. The division also supplied and arranged for many of the principal speakers at about ten regional meetings of the Institute of Sanitation Management. It successfully publicized and distributed throughout industry the booklet by J. Lloyd Barron and Albert J. Burner titled "Building and Equipment Sanitation Maintenance—Principles and Practices." The Industrial Division also participated in several special projects such as the Industrial Health Conference held last April. A display booth was set-up and booklets were distributed at the conference.

Other publicity activities of the division included a "flip chart" for use by sales staffs; general printed publicity, and cartoon strips. In recognition of this program, the association received a certificate of achievement from the American Public Relations Association and was the subject of an article in the publication of the Public Relations Society of America. Looking toward the future, Mr. Rockwell stressed the need for greater effort in promoting the products of the industrial division and noted that most producers' advertising budgets for industrial products are

disproportionate to the size of the market.

A feature of this year's industrial session was a "brainstorming" session conducted by Austin Marshall of Porter Henry & Co., New York sales training consultants. Mr. Marshall demonstrated the techniques of conducting such a session with members of the industrial division as participants.

Fatty Acid Meeting

A short business meeting marked the opening of the first session of the Fatty Acid Division, the morning of Jan. 20. Arthur R. Bethke, Darling & Co., Chicago, division chairman presided as the group elected the following divisional steering committee:

Chairman, W. O. Robertson, A. Gross & Co., New York; vice-chairman, Burton W. Schroeder, Archer-Daniels-Midland Co., Minneapolis; A. R. Bethke; K. K. Boyd, Emery Industries, Inc., Cincinnati; A. B. Durand, Union Bag-Camp Paper Corp., New York; W. C. Hardesty, Acme-Hardesty Co., New York; M. E. Lewis, Armour & Co., Chicago; W. J. O'Connell, Humko Div., Memphis; and Felix E. Lacey, Swift & Co., Chicago.

The use of the "Vapor Fractometer" can yield a fast analysis of fatty acid methyl esters, Nathaniel Brenner of Perkins-Elmer Corp., Norwalk, Conn., reported in a paper given before the Fatty Acid Division. Co-authored by Philip Scholly and Lawrence O'Brien, also of Perkin-Elmer, the title of the paper was "The Analysis of Fatty Acid Esters by Gas Chromatography."

"Gas chromatography, the authors point out, provides a powerful means for the separation of complex mixtures of volatile materials into individual components. This separating power may be used for preparation of pure materials, or, much more generally, for the qualitative and quantitative analysis of the samples."

Near record production of tallow and grease in the U. S. and high output of coconut oil in the Philippines in the last half of 1959 were predicted by R. D. Willemin*, commodity specialist of Merrill,

Lynch, Pierce, Fenner & Smith, Inc., Chicago. Tallow and grease production this year may be 150 million pounds greater than in 1958, although its use in soap may drop 30 million pounds under the '58 level, Mr. Willemin told the joint Industrial-Fatty Acid Divisions lunch Jan. 20.

A symposium — "Fatty Acids and Derivatives in Special Purpose Soaps and Detergents" — was the feature of the joint afternoon session. Participants and their subjects included:

Dr. W. M. Linfield, Armour & Co., "Industrial Soaps — What Can Be Done with Soaps to Meet the Detergent Challenge?"; A. J. Gard, Dow Chemical Co., "Soap Detergency"; Carl Pacifico, American Alcolac, "Fatty Alcohol Sulfates"; A. James Freeman, General Mills, Inc., "A New Family of Fatty-Based Amphoteric Surfactants"; F. W. Woodward, General Aniline & Film

Corp., "Specialty Anionics of Fatty Origin"; and H. W. Zussman, Geigy Chemical Corp., "Fatty Amide Detergents."

These papers will appear in full in the March issue of *Soap & Chemical Specialties*.

General Session

"The Outside Factors that Influence Product Improvement and Sales" was the theme of a symposium during the general session the morning of Jan. 21. The outside factors are new textiles, new finishes, new appliances, changes in interior design and a number of other trends in American home life.

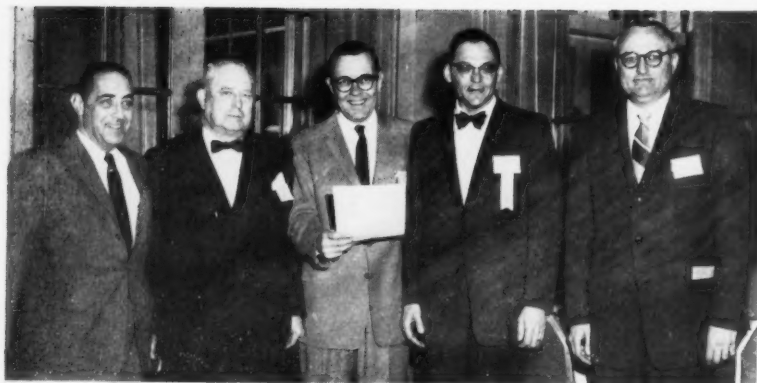
"Textile Trends Affecting Detergency", a paper by George M. Gantz and Hector C. Borghetty, General Aniline and Film Corp., New York, was presented by Dr.

Participating in panel on product improvements based on ingredients. Left to right: R. D. Stayner, Oronite Chemical Co.; John R. Van Wazer, Monsanto Chemical Co.; Richard Wearn, Colgate Palmolive Co.; Moderator; Robert E. Ferris, Purex Corp.; R. E. Vicklund, Sindar Corp.; and George E. Hinds, Continental Oil Co.

Bottom photo is of panel of speakers on fatty acids and derivatives in special purpose soaps and detergents: Left to right are Alvin J. Freeman, General Mills; Andrew J. Gard, Dow Chemical Co.; H. W. Zussman, Geigy Chemical Corp.; Earl Brenn, Huntington Laboratories, moderator; Carl Pacifico, American Alcolac Corp.; F. E. Woodward, General Aniline & Film Corp.; and W. M. Linfield, Armour & Co.



*Mr. Willemin was killed in the American Air Lines plane which crashed while attempting to land at LaGuardia Field, New York, on February 4th.



Newly elected steering committee of the Industrial Division of the Soap Assn. includes, left to right: Leonard J. Oppenheimer, West Chemical Products, Inc.; G. H. Packwood, Jr., G. H. Packwood Manufacturing Co.; Jack L. Jones, Sugar Beet Products Co., chairman; Earl Brenn, Huntington Laboratories, Inc., and John D. Moore, Twenty Mule Team Products Division, U. S. Borax and Chemical Corp. Other committee members not shown are: Frank J. Pollnow, Jr., Vestal, Inc.; Edward Randa, Armour & Co., and Howard Young, Davies-Young Soap Co., Dayton, who was elected vice-chairman of the steering committee.

Gantz. Major innovations in the textile field include novel synthetic fibers and new finishes and chemical modifications for old fibers. The intrinsic hydrophobic nature of synthetic fibers affects ease of drying, dyeing and finishing, soiling, and soil removal. It also permits the manufacture of "wash and wear" garments. That these properties necessitate a fresh approach to the problems of laundering and dry cleaning is obvious, the authors point out.

A detergency problem arises for instance in 100 per cent synthetic wash and wear men's shirts. Concentrated soap or detergent and local mechanical action are required to remove dirt rings around collars and cuffs. "Dacron" and cotton behave differently as regards soil pickup and soil redeposition. "Dacron" has no affinity for the brighteners used in laundry soaps and detergents. After repeated washing "Dacron"/cotton blend shirts may become striated or mottled. The "Dacron" fibers turn gray and the cotton becomes tan, Dr. Gantz said. The answer to this problem may lie in boosting the anti-redeposition properties of detergents.

Resin treated cotton used for "drip dry" shirts may have an affinity for acid dyestuffs which do not usually dye or stain cotton.

On the other hand, affinity for direct dyes such as optical brighteners is markedly reduced, according to the authors. It may be necessary to increase brightener concentration in household soaps and detergents or to find new types of brighteners with greater affinity for treated cotton, Dr. Gantz pointed out.

In the textile industry the trend has been away from anionics and toward nonionics. In the packaged household detergent industry nonionics also show a marked growth, Dr. Gantz said, adding that nonionics exhibit greater versatility and can be tailored for specific applications.

One new development in the textile chemical industry that may have an important effect on detergent manufacture are fluorocarbon polymers which repel both oil and water. One such resin has been developed for use as a stain preventive on upholstery fabrics, wool and leather. While the emergence of such a finish for washable cotton, rayon and synthetics might minimize soil removal problems the authors point to the possibility of a grave brightener problem.

Effects of home appliance development on the detergent market were analyzed by James Alaback of Whirlpool Corp., St. Joseph, Mich., in a talk entitled

"Trends in Appliance Development." Growing popularity of the combination washer-dryer in the home will favor the low-sudsing detergents, the author believes. These machines are of the tumbler-wash type and do not feature suds return systems.

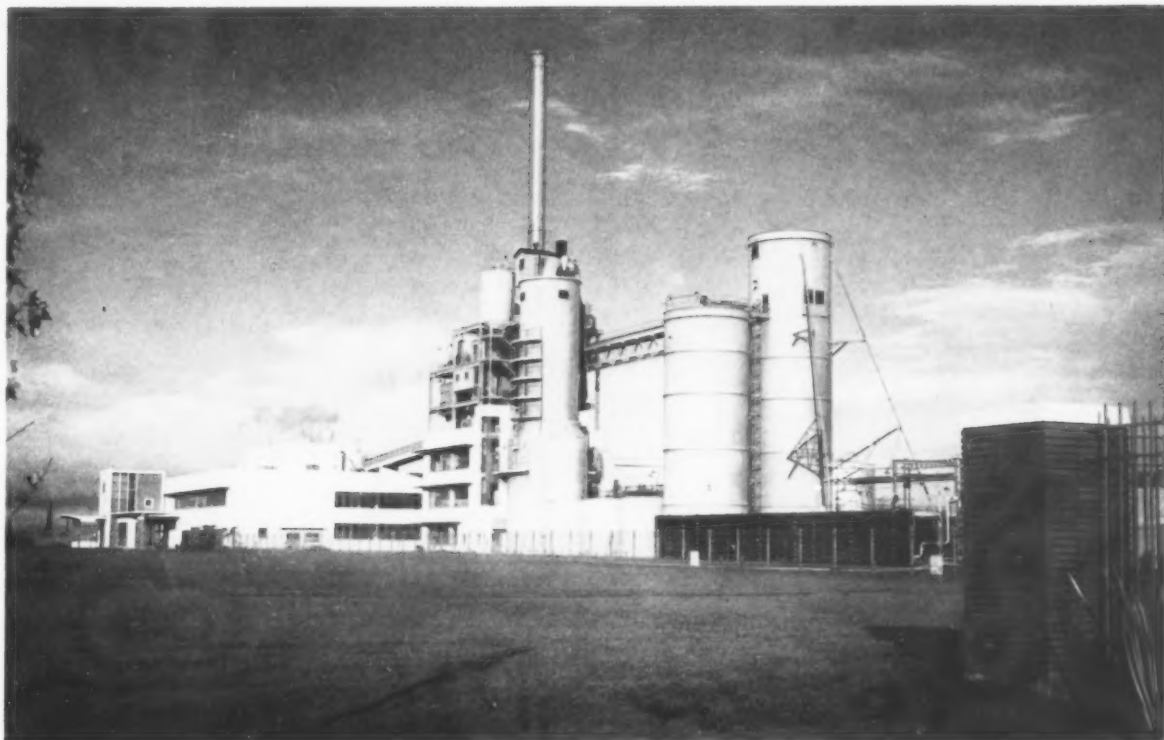
Liquid detergents have a big future in automated home laundry application, according to Mr. Alaback. Speaking of the push-button washer which controls automatically wash time and temperature, rinse time and temperature, speeds of agitation and extraction, he said: "automatic reservoir-type dispensers for detergents and other wash conditioning materials can become an integral part of automated washing programs in the rather near future — perhaps one to three years will see a substantial movement in this direction.

"Despite some concentrated development efforts in the last year or two, we have not yet found a good way to store and dispense granular detergents. However, I honestly feel that we are going to have to move to liquid detergents for storage and dispenser applications, despite some drawbacks, simply because of the greater natural adaptability of the liquid detergent to our product objectives."

Mr. Alaback called on the detergent industry to offer a packaged "kit" of laundry materials for use in an automated washer.

Total expenditures in 1959 for laundry washroom supplies by all kinds of commercial establishments using soap and water will top \$50,000,000, Edward B. Wintersteen of Reuben H. Donnelley Corp., New York, declared in presenting a survey of "Commercial Laundry Trends." About \$30,000,000 of this total will be spent to purchase soap and detergent products. Washroom supplies purchased by large institutional laundries amount to \$200,000 annually. While commercial family laundering is definitely a growth industry according to Mr. Wintersteen, the fastest rate of expansion in related industries prevails in the rug cleaning field. He placed the market for dry-cleaning detergents and chemi-

(Turn to Page 97)



Sacramento, Calif., plant of Procter & Gamble Co. where granular form synthetic detergents are produced.

Procter & Gamble photograph

Anionic surfactants in Heavy Duty Detergents

USING the word "detergents" in its broader sense, heavy duty household detergents are built soap or synthetic detergent based products used for washing clothes and relatively heavily soiled surfaces such as floors and woodwork. Although designed for heavy duty cleaning, they are frequently used for relatively light duty tasks such as washing dishes and fine fabrics. As a result such products are often classed as "general purpose" detergents.

In a discussion of anionic detergents, soaps as well as synthetics should be considered. However, since World War II there has been a remarkable growth of synthetics and a rapid decline in the

By C. C. Tillotson,*
Procter & Gamble Co.
Cincinnati

use of soap. The shift was gradual, starting in 1933 when the first synthetic household detergent was introduced. This was a light duty product. Development of the heavy duty type was delayed due to technical problems in formulation and to manufacturing and supply problems during World War II. The lack of production capacity for complex phosphates which were found uniquely suitable for this type product was a major factor in this delay. However, with the introduction of the first heavy duty household detergent in 1946 and its immediate consumer acceptance, the replacement of soap by syn-

thetics was accelerated. By 1953 they were about equal. By 1957, a little over three-fourths of the total soap and synthetic detergent sales were for household packaged products based on synthetic detergents.

As a result of their "general purpose" usage, heavy duty products have acquired a large share of the market. The results of a market analysis for 1957 are given in Figure 1. This shows that on a dollar value basis the heavy duty products have about two-thirds and the light duty products have about one-third of the total market for packaged products. In this analysis heavy duty products based on soap were less than five per cent of the total. In view of their minor importance for heavy duty use, soaps will not be dis-

*Paper presented before 45th annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 9, 1958.



cussed in complete detail.

Although the use of nonionic detergents has grown considerably in recent years, anionic synthetic detergents were used as the base for over 90 per cent of the total heavy duty products sold in 1957.

Before going into the use of anionic surface active agents in heavy duty household detergents, let us consider the objectives in the formulation of such products. In the most general terms, there are two broad objectives: 1. Product should do what it is intended to do. 2. The housewife has to like it.

In accomplishing these objectives, the more specific requirements listed below are important. These are:

- a. Cleaning
- b. Whiteness maintenance
- c. Sudsing and suds stability
- d. Safety
- e. Convenience
- f. Economy
- g. Color and odor

Cleaning and whiteness maintenance: Although not necessarily listed in the order of importance, it seems logical to say that cleaning ability and the ability to prevent soil redeposition — here termed whiteness maintenance — are fundamental considerations.

These will be discussed in more detail later.

Sudsing: Sudsing is extremely important because the housewife expects to see suds and *wants* suds, in spite of the fact that excellent low or controlled sudsing detergents are available. Traditionally, the housewife has used suds level as a gauge to determine the amount of soap needed for satisfactory cleaning. This is also true for the normal sudsing synthetic detergents. This is such an important point that the detergent manufacturer spends a great deal of time in research to tailor the sudsing characteristics of products to serve to indicate to the housewife when enough detergent is present to give good cleaning. In front loading or tumbler type automatic washers normal foaming products suds much more than they do in the top loading automatics, or conventional wringer washers. To prevent excessive sudsing which interferes with washing action in tumbler washers, less product *must* be used. This means a reduction in detergent concentration and frequently unsatisfactory cleaning. The development of low or controlled sudsing products has benefited users of tumbler type washers in which enough detergent to give good cleaning can now be employed. Although nonionics are widely used, anionics are also important for low sudsers. For top loading washers either normal or low sudsing detergents are suitable and give good cleaning when properly used. Here, again, the house-

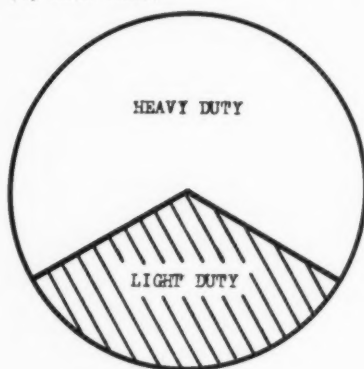
wife must be pleased. Some have learned to use and like the low sudsers. However, market research and sales statistics on the relative volume of brands sold show that the vast majority still like to see good profuse suds.

Safety: Safety is another important factor in detergents. Safety in this connection applies to the effect of the product on the hands, on fabrics, on metal and rubber parts of washers, and on floors and painted surfaces. Inasmuch as detergents are used for hand as well as machine washing, the general purpose products must be mild to the hands and safe to use for delicate fabrics, as well as being suitable for the household laundry and general cleaning of floors and painted surfaces. By careful selection of suitable anionic detergents, builders, and anti-corrosion and anti-tarnish ingredients, mild and safe products can and are being made.

Convenience and economy: Convenience and ease of use of detergents are important. For granules, free and easy pouring, measuring, freedom from caking plus ready solubility are essential characteristics. Exceptional progress has been made in these detergent properties by improvements in raw materials, processing, and packaging. The effort to develop "all purpose" liquid detergents is another step in the direction of making products to provide more convenience for the housewife. They are easier to pour and more convenient to apply to heavily soiled areas of clothing prior to washing. However, currently marketed liquid products have limited acceptance. Sales of "all purpose" liquid detergents will be limited until some way can be found to make them more closely comparable in performance and cost to heavy duty granules.

Color and odor: The use of color can be functional as in the case of the addition of bluing ingredient in a blue colored product. Otherwise, color and odor are subjective properties. However, they

Figure 1. Projection of detergent types (by sales value)



can be very important in meeting the second broad objective mentioned before, that is, "The housewife has to like it."

Formulation Requirements

We have discussed the general principles and requirements which are important for heavy duty household detergents. Now let us go into more detail on the specific requirements important in their formulation. There are four components of major importance to the removal of soil from fabrics and the appearance of the fabric after laundering. These are listed below. The four components are:

1. Organic active
2. Alkaline builders
3. Soil suspending agent
4. Fabric whitener or fluorester

Let's look at these components in relation to a normal sudsing granule type product. Table 1 shows the normal range of the various materials used in many sudsing heavy duty granular detergents now available.

1. The organic active or synthetic detergent ranges from 15 to 35 per cent. It assists the washing solution in wetting the fabric and soil and helps loosen the soil. This requires effective wetting and emulsification. In addition, the detergent helps disperse soil and keeps it from adhering to the fabric.
2. Alkaline detergency builders are required in large quantities. Frequently they represent up to 50 per cent of the product. Builders function as water softeners and also aid in the removal and suspension of soil. The types most frequently used are complex phosphates, primarily tetrasodium pyrophosphate or pentasodium tripolyphosphate. The development of effective heavy duty synthetic detergents was dependent on the discovery that complex phosphates such as tripolyphosphates, in combination with synthetic detergents, promote cleansing action in clothes washing. In addition, they do not make the clothes

Table 1. Normal Sudsing Heavy Duty Granules

Organic active	15 - 35%
Complex phosphate	25 - 50%
Silicate	5 - 10%
Sodium sulfate	10 - 20%
CMC	Up to 1%
Fluorescer	Trace
Perfume	Trace

harsh, as do other alkalies.

3. A soil suspending material such as sodium carboxy methyl cellulose is needed to assist the synthetic detergent and the alkaline builders to keep the soil suspended in the washing solution and to prevent it from redepositing on the fabric.
4. A fabric whitener or fluorester is the fourth important ingredient. Used in very small quantities, whiteners are usually blends of different brighteners chosen for specific substantivity to various fabrics.

Other ingredients not mentioned in listing the four major components include:

Sodium silicate which provides protection for aluminum. Also, it provides some assistance in detergency and in the production of spray dried granules with good physical characteristics.

Table 2. Typical Heavy Duty Liquid Detergent Formula

	Per Cent
Water	app. 50
Organic active	10-15
Pyrophosphates	15-20
Solubilizers	5-10
Sulfate, silicate, dye, etc.	0-5

Sodium sulfate is present as a by-product from the sulfation or sulfonation reaction.

In addition to perfume, color is sometimes desirable. Also, a fraction of a percent of a material such as urea derivative which is helpful in preventing darkening of some types of silverware may be used.

Heavy Duty Liquids

The heavy duty liquid detergents require the same four components mentioned above for granules. A typical formula is given in Table 2. However, the problem of making a homogenous product which will not separate or settle on standing and have a high enough concentration of organic active and builders to give well balanced performance is most difficult. The potassium salts of the complex phosphates are used



because of their greater solubility. A total solids content of at least 50 per cent is desirable to eliminate packaging any more water than necessary and to give reasonably good performance without having to use an excessive quantity of product.

The most important types of anionic synthetic detergents used for heavy duty granules are shown in Table 3. They are:

Table 3. Major Anionic Synthetics

1. Alkyl Sulfates
 - a. Tallow
 - b. CNO
2. Alkyl Aryl Sulfonates
 - a. Keryl benzene
 - b. Polypropylene

The anionics comprise about 75 per cent of the total surface active agents used in detergents based on U.S. Tariff Commission statistics for 1957. Almost 95 per cent of all anionics suitable for detergents were alkyl sulfates and alkyl aryl sulfonates.

The selection of the best type of anionic synthetic detergent for a product is a complicated problem. It is tied in with the amount and type of inorganic builders and the other ingredients for which a great deal of research, performance evaluation in the laboratory, and market research is required to determine the best formulation to meet the customer's requirements. The primary considerations are sudsing, excellent cleaning, mildness, and economy.

Alkyl Sulfates: Straight chain C_{12} to C_{18} fatty alcohol sulfates offer better sudsing and detergency than those with a branched chain. From a theoretical standpoint the superior performance of straight chain fatty alcohol sulfates is explained by the way the molecules orient themselves in that they will pack together more closely at the interface. Branched chain molecules do not pack as closely. They are more water soluble and better wetting agents. However, they are poorer in sudsing and detergency than their straight chain relatives.

The sodium salt of tallow alkyl sulfate provides good de-

tergency but it is not as readily soluble as coconut oil alkyl sulfate. Products made with alkyl sulfates are well suited for general purpose usage when properly formulated.

Alkyl Aryl Sulfonates: The sodium salts of alkyl aryl sulfonates have captured the largest share of the market of any synthetic detergent. This is due to their good detergency and sudsing characteristics and relatively low cost. A number of problems were encountered with the first commercial products derived from kerosene and benzene called keryl benzene sulfonates. Although used to some extent in consumer products, they were not as good as desired in color or odor and gave difficulty in spray dried detergents because of caking characteristics. These problems were largely overcome with polypropylene benzene which comprised about 90 per cent of the total alkyl benzene production in 1957. The best combination of detergency, sudsing, and solubility characteristics was obtained with a product containing 12 carbon atoms as a side chain on benzene.

While the C_{12} or tetrapropylene is used in most products, there has been some interest in higher molecular weights up to C_{15} and in straight chain rather than branched side chain molecules.

A better picture of the size and importance of the household laundry might be helpful at this point. This is a tremendous processing operation. There are 51 million homemakers, 44 million washing machines in use, and 1.5

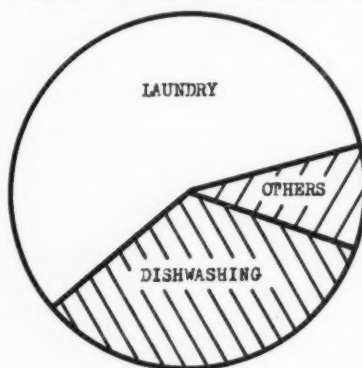
billion pounds of clothes washed each week.

The problem of making products to satisfy this market is complicated by a number of other factors. These are listed and explained below:

1. **Standards of Quality**—There is a wide variation in the standard of washing results acceptable to the housewife.
2. **Variations in Water Hardness**—For example, a recent analysis showed that about 50 per cent of the homemakers use water of 4.7 grains per gallon hardness or less. However, 40 per cent use water between 4.7 and 12.0 grains, and 10 per cent use water over 12.0 grains hardness. Although synthetic detergents do not form the objectionable lime soap deposits obtained with soaps, a larger amount of product is required as water hardness increases.
3. **Fabrics and Finishes**—Although most of the fabrics in the household laundry are composed of the well known cotton, linen, and rayon fibers, the increasing use of newer man-made fibers, wash-wear finishes, and other special finishes or softeners create other problems in some cases.
4. **Washing Machines**—The various types of washing machines have different performance characteristics. Of the 44 million washing machines now in use, about 57 per cent are the wringer or spinner type, 32 per cent are top loading automatics, and 11 per cent are front loading automatics.
5. **Other Uses**—The major use of heavy duty synthetic detergents is for washing clothes. However, an analysis of the various types of applications helps explain why it is important to keep the general purpose usages in mind in developing products for this market. Figure 2 gives an estimate of the approximate usage distribution of heavy duty synthetic detergents by purpose.

(Turn to Page 169)

Figure 2. Usage distribution by purpose





Shampoo formulation has been the area of toiletries formulation which has felt the greatest impact from the introduction of synthetic detergents. Growth of shampoos is largely due to the availability of technically improved products made possible by synthetic detergents, in the opinion of the author.

Anionic Surfactants in

Toiletries and Personal Products

THE consumption of cosmetics and toiletries is reported to have increased thirty-fold in the United States within the space of the less than two generations since the start of World War I (1). Technical advances which have led to new and improved products have contributed to this market growth, but the major part of the growth must be attributed to changes in the economic and social patterns of American life. These latter changes have resulted in increased numbers of American people becoming aware of the importance of cleanliness and grooming and more Americans having greater disposable incomes a part of which can be allo-

By J. M. Longfellow*,

Colgate-Palmolive Co.
Jersey City, N. J.

cated to the purchase of grooming requisites (2).

The Toilet Goods Association estimated (1) that, in 1957, total sales of perfumes, cosmetics, and other toilet preparations, excluding toilet soap, reached a record high of \$1,430,700,000. Drug Topics (3) Annual Survey of total civilian spending for goods in the TGA category just cited totalled \$1,640,230,000; their estimate for toilet soaps was \$218,960,000 and for deodorant soaps \$57,390,000. For the personal products we are here considering, then Drug Topics estimated 1957

civilian spending totalled \$1,916,580,000, and we may note that tooth-pastes (\$202,340,000) and shampoos (\$146,680,000) with the soaps mentioned above totalled \$625,370,000. These three categories thus accounted for almost $\frac{1}{3}$ of the sales in a market that was reported (by Drug Topics) under about 50 categories.

Toiletries, then, represent today a considerable market, and one attractive enough to warrant some consideration on the part of the purveyor of surfactants. Pacifico and Ionescu (4) expressed the surprise industrial chemists are apt to experience at noting the amount of surfactants used in cosmetics. These authors estimated that in 1955, 18 million pounds of surfactants (on

*Paper presented during 45th annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 9, 1958.



Toiletries represent today a considerable market, and one attractive enough to warrant some consideration on the part of the purveyor of surfactants.

a "100% active" basis) were used in cosmetics and pharmaceuticals. Of this amount, only slightly less than half was made up of anionic surface active agents.

What Problems?

What, then, have been the problems in the application of anionic surfactants to toiletry products, and what progress has been made in their solution? In past decades, cosmetic chemists have applied themselves unremittingly to the replacement of formulation art by formulation science. Important progress has been made, and much of it has resulted from efforts to modernize toiletry formulations to incorporate the advantages made available through synthetic surfactants. However, the problems of formulating toiletries, and, particularly, of evaluating them for stability and for performance, remain difficult, and are certainly not yet subject completely to scientific treatment. In these circumstances, it is much easier to see where we are going than to specify exactly where we are. It is, however, our purpose to make an assay of where we stand today, and it must be attempted know-

ing full well that our rapidly on-rushing cosmetic science is not really standing at all.

General Requirements

The selection of a surfactant for a specific application in toiletry formulation entails considerations of price and suitability to the purpose analogous to those encountered in any application. There are areas that merit special emphasis, however. That we do not place price, physical form and chemical stability in the group especially emphasized for cosmetics does not imply that these factors are not very important in cosmetic applications—for indeed they are—but only that these factors are considered, in their complex interplay with the other attributes of the surfactant, in much the same way by the toiletries formulator as they are by the scientist who uses them in any other application.

The "esthetic" properties—such as color, odor, and taste—of a surfactant are very important in toiletry applications. That the color and odor (and taste) of a toilet article have a great deal to do with the consumer's acceptance of that article is certainly well

known, and hence it is obvious that a cosmetic chemist will not accept (if he has the choice) a limitation imposed by a surfactant ingredient on the color, taste or fragrance of his final product. It is less well known that the "esthetic carry-over" in subjective evaluation of other properties of cosmetic compositions is so strong that their evaluation is at least suspect and often almost worthless if the color, odor (or taste) is either well liked or much disliked. This means, among other things, that attempts to evaluate discolored or malodorous surfactant samples to determine whether a "cleaned up" specimen of the same surfactant would be useful in toiletries are of almost no value.

The toxicology of any material used industrially and in preparations meant for use on the consumer's person is certainly of grave importance, and the cosmetic chemist is very much concerned with this aspect of his science. As Chemical Week recently noted (5), suppliers of ingredients to all of the formulation industries are coming to realize that the availability of readily available and reasonably complete toxicological data on their products results in prior consideration by the potential user, who prefers to evaluate first those possible ingredients the toxicological properties of which are known to him.

In toiletries, the toxicology data of primary importance are those concerned with ingestion, contact with the skin, and contact with the eye; it may be noted that inhalation data is rapidly becoming of very great importance, as well.

Ingestion toxicity is a topic of such wide-spread interest that it scarcely warrants being noted in connection with toiletries as distinct from consumer and industrial products in general. The problems of interpretation and application of laboratory data are indeed complex, but this is true in every field in which such data are used.

Skin contact phenomena are

of more direct interest in the field of toiletries, and testing of materials for skin damage has elicited a number of investigations, which have been particularly well discussed in recent publications by Götte and coworkers (6), and by Stüpel and Szakall (7). In practice, patch tests on the skin of human subjects (after preliminary animal testing) are employed to predict the incidence of irritation or of contact allergic eczematous response. While patch tests are indispensable in present practice, they are not completely reliable in predicting the reactions which will be encountered under use conditions, and much further study is needed in this area.

Eye contact testing is currently performed by employing the rabbit's eye by the technique of Draize, Woodard, and Calvery (8), slightly modified in some instances. While this technique leaves some opportunity for criticism in extrapolating its results to humans, it is possible to obtain technically reliable and reproducible data with the method, and it will undoubtedly be maintained in the armamentarium of safety testing for many years before a superior technique is found.

In recent years, the realization that inhalation represents another and important route whereby substances in toiletries may enter the body has been more and more widely discerned. In this important area, however, there has been yet only a preliminary exploration of the hazard, and we have not yet developed techniques to estimate the hazard of specific toiletries materials, which are widely accepted as valid. Inhalation toxicology per se, however, is not a new field, and the adaptation of techniques to specific toiletry problems is in progress. (10).

Variations in the proportions of molecular species present in toiletry formulations have proved to have noteworthy effects on important properties of the final product. Viscosity, emulsion stability, foam, and clarity are

among the important properties of toiletries which have been noted to vary complexly with the variations in inorganic electrolyte, free fat, and surfactant chain length, and these variations in product composition may derive from variations in the composition of a commercial surfactant.

Thus, commercial lauryl alcohol prepared by hydrogenation of coconut oil may have the following composition, typically: (11).

C ₁₂ :—	2%
C ₁₂ :—	60-65%
C ₁₄ :—	20-25%
C ₁₆ :—	10-12%
C ₁₈ :—	2%

The following analysis is typical for a commercial lauryl sulfate prepared from such a mixture of alcohols (11):

	Na lauryl sulfate	T. E. A. lauryl sulfate
Active ingredient	30-31%	ca 45%
Free fatty alcohol	1.5-2.5%	1.5-2.5%
Mineral salt	1-1.5%	1-1.5%
Water	to 100%	to 100%

Physical chemists have studied the formation and stability of foams by a variety of techniques. The simple system water-sodium

dodecyl sulfate—dodecanol: bears an interesting relation to the commercial lauryl sulfates, and one of the factors in foam stability—foam drainage—has been studied in this system of high purity components by a number of workers (12,13). The importance of the ratio of dodecanol to sodium dodecyl sulfate in the stability of foams is clearly demonstrated in this work, and evidence of intermolecular compounds consisting of one mole sodium dodecyl sulfate: one mole dodecanol and of two moles sodium dodecyl sulfate: one mole dodecanol has been obtained.

Myddleton (14) has also demonstrated that lauryl alcohol inhibits the foam depressant action of butanol on commercial lauryl sulfate. These interrelationships of the unsulfated to sulfated molecular species are thus observed—if usually less specifically identified—in compositions based on commercially available surfactants. Hence, the toiletries formulator turns a very jaundiced eye towards naive attempts to "improve" surfactant mixtures by reducing or eliminating unsulfated and to products which exhibit wide lot-to-

The \$210,280,000 spent for dentifrices in 1958 makes this segment of the toiletries market a very close second to the \$218,960,000 of toilet soaps (3). The amount of surface active agents required for dentifrice is not at all in proportion to the size of the market.



lot variations in unsulfated content. The proportion of unsulfated in toiletries formulation has also proved important in the stability of emulsions and suspensions. Here again an unexpected variation in commercially available surfactants can have undesirable effects on the product.

The compatibility and interaction of other toiletry ingredients with electrolytes imposes another important restriction on the tolerable amounts and variations of electrolytes in commercial surfactants. An important compatibility problem is presented by the large group of gums commonly used in toiletry formulations. The type of electrolyte present and its concentration in the surface active agent may have a twofold effect: viscosity of the final product may be affected and the dispersability of the gum itself may be materially altered.

The properties of the final product are very sensitive to the chain length and molecular weight of the surface active agents formulated into the commercial detergent or emulsifier used. Chain length affects the bubble size of foams and great differences in solubility exist between different members of a homologous series of surfactants. Any change in the proportion of different surface active molecular species will be reflected in the final toiletry.

Surfactants are, each to a greater or lesser degree in specific examples, wetting agents, foaming agents, emulsifiers, detergents, solubilizers, and dispersing agents, and it is the combination of these surfactant properties that is the primary basis for the use of surfactants in toiletries (16-22). While some generalizations can be made about the relative effectiveness of each class of detergents in respect to each of these properties (16), the basis for these generalizations is some rather specific tests and experience in specific systems. One finds numberless exceptions to rules thus derived, but they are nevertheless valuable in first approxima-

tions preparatory to experimental design. Thus, fatty alcohol sulfates are generally found to be superior foamers, but not as effective detergents as the sulfonated amides, nor as good in wetting as sulfonated esters of the dibasic acids. Good foam with moderate detergency is desirable in some toiletry applications—such as shampoos—the surfactant often being the primary ingredient around which the composition is built. In wetting applications, the surfactant is more likely to be an adjuvant ingredient present in minor amount, designed to improve the application properties or speed the penetration of the cosmetic containing it. Essential oils and lanolin are frequently solubilized in systems in which they are otherwise incompatible by surfactants (23).

Other properties, not generally considered surfactant properties specifically, often are important in the experimental selection of a surfactant for a given application. Of course, the reaction to the environment of the medium—especially to pH—is of obvious importance. The condition or "feel" of hair or skin may be perceptibly influenced by the absorption of anionic surfactants, as Zussman (24) pointed out in noting the scroop effect of certain alkyl benzene sulfonates, and Flett (25), has noted the deodorant properties of certain sulfonated aromatics, suggesting this property should be of value in toiletry applications.

Shampoos

Shampoo formulation has been the area of toiletries formulation which has felt the greatest impact from the introduction of synthetic detergents. The shampoo market over the past 25 years presents a fascinating opportunity for a study of the interplay of technical developments with marketing economics and personal grooming habits: the rapid growth of the shampoo market to its 1957 retail level of \$146,680,000 has been coincident with the introduction of syndets into shampoos, and one

may well ask whether this growth has not been largely due to the availability of technically improved products made possible by synthetic detergents.

The impact of the availability of syndets on the technical aspects of shampoo formulation and, particularly, of shampoo evaluation has been equally or even more impressive. The measurement of the improvement in a shampoo's properties and performance due to alterations in its composition is a very complex problem involving many subjective judgments. Efforts to devise scientific—i.e., reproducible and precise—methods for the laboratory evaluation of shampoos have been closely associated with the investigation of syndets as shampoo components, and this problem is responsible for the increasing degree of accuracy with which we can make technical evaluations of shampoos.

The best estimate available of the amount of anionic surfactants used in shampoos is that of Pacifico and Elder for the year 1954 (26). Their estimate for the year 1954, in which the retail dollar volume was \$116,920,000, is given in the first column below, and in the second column is a figure derived simply by adding 25 per cent to their estimate to give a very rough estimate of the increase through 1957, when \$146,680,000 was spent for shampoos.

	1954 Millions of Pounds	25% Growth Millions of Pounds
lauryl sulfates	5.9	7.4
alkyl monoglyceride sulfates	1.3	1.6
soap	1.9	2.4
(100% Active Basis)		

Such cavalier use of their data as that above is, of course, not warranted for any but a very rough estimate of the volume of these materials going into shampoos: it ignores changes in retail price, changes in market share, and changes in formulation which have certainly occurred since 1954.

(Turn to Page 101)

Detergent Adsorption on Soil and Substrate

THE important feature of adsorption measurements is whether correlation has been shown to exist between them and cmc^* , zeta potential, detergency and other measurements: These will be summarized.

The adsorption values for four alkyl sulfates and for six other anionic surfactants all showed adsorption maxima at or very near their *critical micelle concentrations*. Additional evidence with other carbons of different mean diameters showed that though the magnitudes of adsorption varied, the breaks in the curves occurred at the same concentration corresponding to the cmc^* (86). Other investigators found inflections in the concentration-adsorption curves at the cmc^* , but maximum adsorption took place at considerably higher levels (62). Differences here are attributable to the experimental conditions used. Inflections in the adsorption isotherms occur at cmc^* , probably because aggregation depletes the solution of molecular species available to adsorption. The significance of cmc^* on adsorption values lies in the availability of molecular surfactant in sufficient concentration to be adsorbed. *Micelles* are said not to concentrate at interfaces through lack of the necessary hydrophil-hydrophobic balance, and micelles of anionic compounds are

By Jay C. Harris

Monsanto Chemical Co.
Central Research Laboratories,
Dayton, O.

Conclusion

not sorbed. Cationic micelles are positively charged and adsorbed, and this was said to account for the significant shape of adsorption curves above cmc^* (106) for these surfactants.

Minimum size aggregates of carbon were obtained at much below cmc^* and the adsorbed sodium dodecyl sulfate had an indicated surface area of coverage per molecule of 67 \AA^2 , almost double that of the area for a condensed monolayer (103). This suggested either that the surface position of the molecule was changed from a polar head-down position to a flat-to-the surface placement, but more probably that there were spaces on the carbon not covered by the surfactant.

The adsorption of sodium

***"Sterling RS" is registered trade name of Godfrey L. Cabot Co.

dodecyl sulfate on "Sterling NS"*** carbon (mean diameter $75.5 \text{ m}\mu$, $21.6 \text{ m}^2/\text{g}$ by nitrogen adsorption) has been estimated assuming uniform coverage. These data, with indicative characteristics of the *dispersion*, and dependent upon sodium dodecyl sulfate concentration are shown in Table II. It is interesting that at cmc^* , apparent saturation of the carbon particles had not occurred, and quite pertinent that the maximum adsorption on both soil (carbon) and substrate (cotton) occurred at nearly the same concentration, substantially above the cmc^* . As with cotton, complete monolayers of surfactant are not necessarily formed with carbon particles, and *zeta potential* alone is not adequate to account for the dependence on surfactant concentration for the tendency of carbon and cotton to adhere. Adsorption of only the sulfate ion or micellar adsorption were rejected as explanations for this type of curve; electrophoretic values and changes in the state of the adsorbed film also failed to explain the data (104).

Zeta potential was considered a prime factor in producing stable *suspensions* of carbon in soap solution (84), but this obviously is also a function of adsorption of surfactant on the suspendate surface. The mobility of ilmenite particles, though about half that for oil in water, was made equal to water by addition of either sodium laurate or sodium tetradecyl sulfate. Orientation of the surfactant with the polar head to the polar particle with the non-polar ends outward was suggested as an explanation for this phenomenon (82), the particles then

Table 11. Adsorption of Sodium Dodecyl Sulfate on Carbon (104).

Wt. % NaDS	$\text{\AA}^2/\text{Mol}$ on Carbon	Characteristic Feature
0.04	76.6	Minimum deposition C on cotton
0.06	67.3	Sharp decrease size C aggregates
0.234	43.3	cmc
0.37	30.2	Maximum adsorption on C
0.34	30.8	Maximum adsorption on cotton
0.60	35.4	Adsorption NaDS decreasing

*Critical micelle concentration.

taking on the character of an oil. Increase in zeta potential through adsorption of surfactant ion stabilizes suspensions of oil or solids, the high charge helping to account for easier removal of soil from substrate (100). *Deflocculation, suspension and zeta potential* are considered as inter-related (84). Interestingly enough, curves of these values all bear a resemblance to adsorption isotherms.

Suspension of soil was said to be effected by *deflocculation* of coarse aggregates primarily through the zeta potential induced on soil, and involved the adsorption of simple ions or molecules. The suspension isotherms bear some relationship to adsorption isotherms, but cmc^* did not appear to directly relate to either (102).

The adsorption of soap by textile fibers appears of importance to *suspending power*, as the adsorbed soap ions impart negative charges (zeta potential) to the fibers enabling them to repel the negatively charged soil particles. The suspending power of soap was said to depend largely on its adsorption at the interfaces involved, the "minimum residual concentration necessary for satisfactory detergency appearing to be merely the minimum concentration necessary to maintain the adsorption equilibria at the required levels" (109).

Suspending action of non-ionics for carbon is generally good, but for manganese dioxide is extremely poor. This was explained on the basis that adsorption of the surfactant, polar end to polar particle, resulted in a hydrophobic coating with subsequent rapid sedimentation. The same mechanism to a lesser degree may be assumed to occur with ilmenite (67). A correlation between the suspending power for manganese dioxide and adsorption was shown (32), but the relationship was not clear, since "Aerosol OT"*** at a molecular area of 49 \AA^2 was a better

suspending agent than a sodium alkylbenzene sulfonate at 20.5 to 24 \AA^2 per molecule, and sodium oleate (19.6 \AA^2) was superior to either. Specific adsorptive effects are indicated as the probable explanation.

The similarity between adsorption isotherms and *detergency* curves was pointed out (26), it being noted that the point of maximum adsorption occurred at the cmc^* .

With pure sodium dodecylbenzene sulfonate or sodium palmitate built with sodium sulfate and/or tetrasodium pyrophosphate, in-

*Critical micelle concentration.

Jay C. Harris, author of article "Detergent Adsorption on Soil and Substrate", the fourth and final installment of which appears in this issue, has been selected to receive the 1959 Committee D-12 (Soaps and other Detergents) Award of the American Society for Testing Materials, it was announced last month. The presentation will be made at the annual meeting of Committee D-12 at the Hotel Sheraton, New York, March 10. The citation recognizes Mr. Harris' outstanding efforts in the Committee's work in the development of testing methods and standards, and his many contributions to the science of detergents.

Mr. Harris served as secretary of Committee D-12 from 1946 until 1950, and since that time has been its chairman. He has worked in the development of synthetic detergents and is the author of many technical papers and books in this field.

He also has prepared a comprehensive bibliography in the field of metal cleaning. Mr. Harris is presently assistant director of research, Research and Engineering Division of Monsanto Chemical Co. in Dayton, O.

In December, 1956, Mr. Harris received the fifth annual Achievement Award of the Chemical Specialties Manufacturers Assn. for his outstanding contributions in the field of synthetic detergents.



*Critical micelle concentration.

***"Aerosol OT" is registered trade name of American Cyanamid Co.

flections in the adsorption isotherms were found (62) at the cmc^* , but maxima in adsorption occurred at higher concentrations. The shapes of *detergency* curves and adsorption isotherms for both NaDDBS and sodium palmitate were similar but maxima did not coincide, and no direct relation between the absolute magnitudes of these measurements was found.

Utilizing the adsorption phenomenon to improve detergency was mentioned, it being suggested that increasing the adsorption of the detergent itself, or the addition of other materials capable of being adsorbed on the substrate whether or not they are detergents could accelerate the soil desorption rate (26). Evidence that added substances can alter adsorption was indicated through the use of sodium carboxymethyl cellulose (NaCMC) and polyvinyl pyrrolidone (PVP) on fabrics and soils. PVP was preferentially sorbed at the soil interface, preventing soil deposition, and NaCMC was adsorbed by cotton (not wool or silk) to produce the same effect and both improved the effectiveness of surfactants in cleaning (28).

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(Turn to Page 103)

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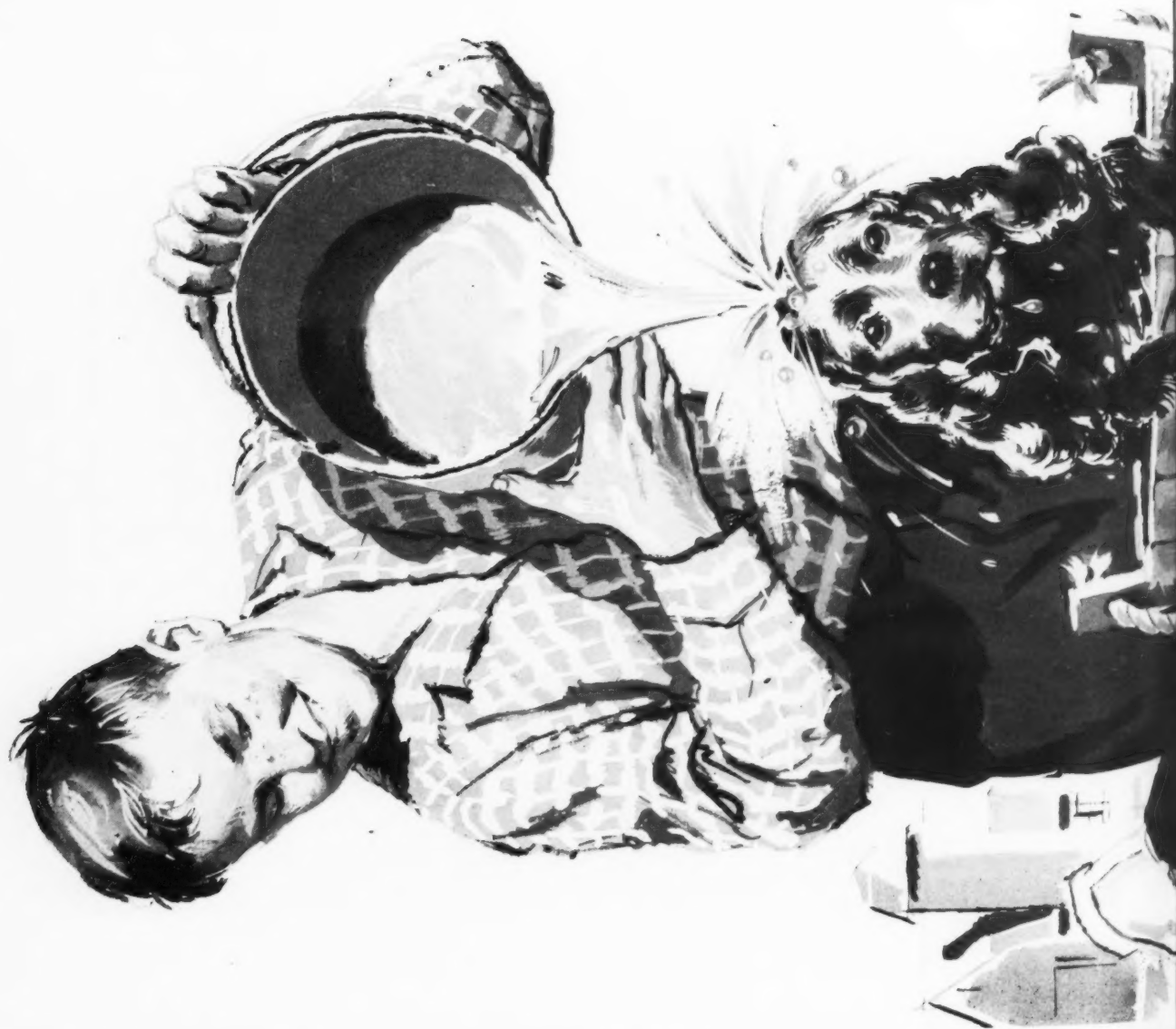
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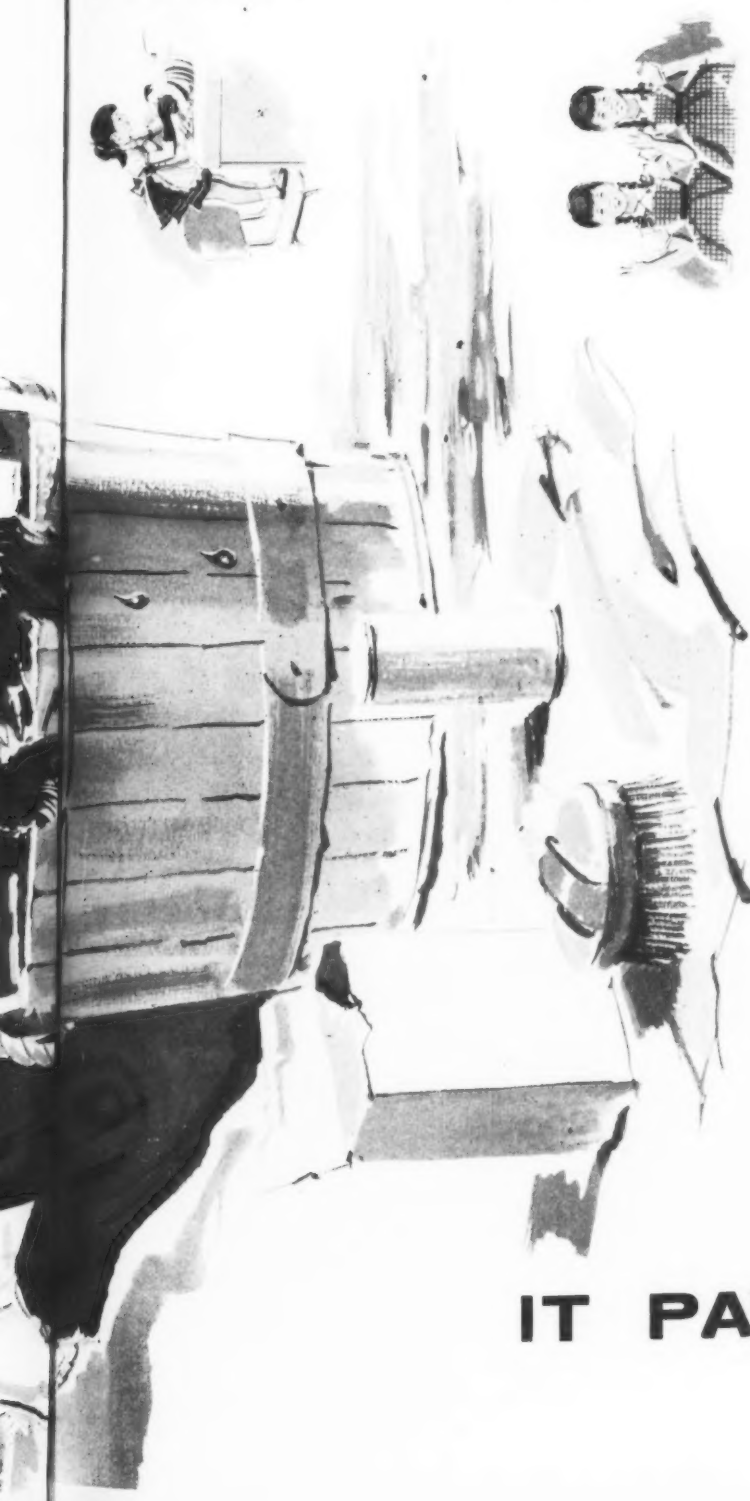
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SOAP and CHEMICAL SPECIALTIES

Hospital Infection and Environmental Disinfection

By Dr. E. G. Klarmann*,

Lehn & Fink, Inc.,
New York



THE correct use of disinfectant products and procedures in hospitals is of great importance for the safety of those involved in hospital practice including patients, physicians, nurses and all other personnel.

Although a very high degree of standardization has been achieved in the performance of the various hospital procedures, there seems to exist considerable uncertainty with regard to the subject of disinfection of the hospital premises as well as of specific objects used in the different departments. There is no implication in this statement that this is the fault of the administrative, medical, nursing or housekeeping staffs of the hospitals. It might be due to the multitude of available antimicrobial products whose claims for effectiveness often are well ahead of their verification as to relevance to particular usage in the hospital. Another factor is that the scientific information concerning new products or processes published in technical journals often does not appear early enough. Nor is it in a form suitable for the several echelons of hospital staffs who, by their very position and qualification, would be logically equipped to apply the information practically and correctly.

Essentially, disinfection is a preventive procedure. To the extent that its performance involves the use of a chemical agent, it is the responsibility of the manufacturer or supplier of such an agent to make sure that his product will satisfy this preventive function fully and unequivocally.

Unlike certain anti-infective drugs designed for internal administration and possessed of a *specific* antimicrobial potency, i.e., of a potency directed against some particular microorganism, it is a fundamental requirement that a product described as a "hospital disinfectant" be *non-specific* in action. In other words, such a disinfectant should be capable of killing all those microbes of epidemiological or surgical significance whose elimination is essential in the several individual phases of pertinent hospital practice. To express it differently, when a physician, a nurse, or an executive housekeeper orders a product designated as a "hospital disinfectant," they should be entirely justified in assuming that it is capable of killing all types of disease microbes constituting an actual or potential hazard, and not just some types to the exclusion of others, e.g., typhoid bacilli but not staphylococci, or streptococci but not tubercle bacilli. Conversely, where there exists a problem of controlling environmental or instrument-borne infection known to

originate with a particular microorganism, e.g., the tubercle bacillus in a TB hospital ward or in a TB sanatorium, the user should not have any reason to wonder whether his "hospital disinfectant" will or will not kill the infective organism which is of primary significance in this special case.

These remarks on the subject of required non-specificity of disinfectants are, by no means, academic since it is well-known that there exist products on the market labelled "disinfectants" which cannot be described accurately as "non-specific" or "broad-spectrum."

Pine oil disinfectant, a popular type of product, is notoriously weak with respect to staphylococci which it does not kill as a rule in any of the recommended use-dilutions, or even in comparatively high concentrations. Obviously the use of such a pine oil preparation would not be indicated, e.g. in an operating room where the clean-up procedure following an operation must provide for the elimination of staphylococci from the environment as a means of guarding against the risk of surgical wound infection at some later point. Similarly, there is sufficient evidence showing that quaternary ammonium compounds may not be relied upon for tuberculocidal action; they would not, therefore, be the antibacterial agents of choice for use on premises occupied by

*Paper presented as part of the forum on disinfectants and sanitizers during the first annual meeting of the Association of Canadian Manufacturers of Chemical Specialties, Nov. 14, 1968, Montreal.

tubercular patients since they would not provide the kind of environmental control of infection required of a disinfectant for use under these conditions. Nor would a quaternary ammonium compound be satisfactory for disinfection of oral thermometers used either by established or potential TB cases. Again, it should be emphasized that none of these examples are to be regarded as academic in character.

Definition of Terms

Up to this point, only the term "disinfectant" has been employed. It is desirable to define this term, as well as certain others related to the subject of this discussion (1-4).

The designation "disinfectant" refers usually to a chemical agent which destroys pathogenic microorganisms, but not ordinarily bacterial spores; this term is used commonly of substances which are applied to inanimate objects although it is sometimes used, not quite correctly, in certain combined terms such as "skin disinfectant."

The term "antiseptic" meant originally a substance opposing sepsis by preventing or arresting the growth or action of microorganisms. Nowadays, it is used especially of agents applied to living tissue. More recently, the term "antiseptic" has acquired a precise legal connotation in the United States since it is referred to specifically in the Federal Food, Drug and Cosmetic Act as meaning the same as a "germicide," except where its use involves prolonged contact with the body (as, e.g., in the case of a wet dressing, an ointment, a dusting powder, etc.), as opposed to a temporary contact (as, e.g., in the case of a mouthwash, a vaginal douche, an eye bath, etc.).

All terms constructed with the suffix "-cide" imply capacity of killing; this would be true of terms such as "bactericide," "microbicide," "fungicide," "virucide," "sporicide," also of the more specific terms such as "tuberculocide,"



"When . . . an executive housekeeper orders a product designated as a 'hospital disinfectant', they should be justified in assuming it is capable of killing all types of disease microbes . . ."

"staphylocide," etc.

Another suffix, "-static," is used frequently to describe a capacity for prevention of microbial growth, i.e., without killing the microorganism. This suffix may be employed in general terms such as "bacteriostatic" or "fungistatic," or in more specific terms such as "tuberculostatic."

We pointed out earlier that disinfectants do not commonly kill resistant bacterial spores. Where sporicidal action is essential, one employs a "sterilizing" agent or process. "Sterilization," either by physical or by chemical means, is presumed to destroy all forms of life including spores, and, incidentally, viruses. By the same token, the term "sterile" acquires a sharply delineated meaning as it signifies freedom from the presence of any and all forms of living matter.

"Sanitizers" are agents capable of reducing bacterial counts to safe levels as may be judged by public health requirements. Unless a substance frees a given surface of bacterial contamination to a significantly greater extent than

does a soap or a detergent alone, its label should not claim sanitizing properties. Sanitizers are used most often in restaurants, also in food and beverage plants in the day-to-day maintenance of sanitary conditions.

It should be noted that in the United States no product may be recommended for use in hospitals unless it is germicidal for both enteric and pyogenic bacteria under specified test conditions.

A term which has come into use in the recent past is "degermation." It is intended to describe the reduction of the so-called resident bacterial skin flora by the action of certain antibacterial agents usually incorporated in soaps or detergents. "Degermation" is not synonymous with disinfection since, actually, the skin cannot be disinfected, i.e., freed from all the bacteria present upon it.

What are the different sources and modes of infection (and cross-infection) which are subject to control, at least in part, by suitable disinfectant procedures, as applied to the premises, furni-

ture, bedding, etc.? Generally speaking one might consider the following three major possibilities:

- 1) contact infection,
- 2) droplet infection,
- 3) dust and lint borne infection.

As to contact infection, it is known that the hands of both patients and personnel may carry infective matter acquired by contamination with infectious discharges, skin lesions, fecal material, etc., and that such contamination may be transferred to various articles whence it is communicated to other patients, as well as to the hospital personnel coming in contact with them. Contamination of bathtubs and toilet seats, of blankets and bed-linen looms large in this picture, particularly with regard to the transmission of staphylococci. In fact, contact infection is regarded by some investigators as being perhaps the most important route of transmission of staphylococcal sepsis (5, 6).

Under the general heading of contact infection, one might refer also to the following possibilities: Enteric microorganisms such as those of typhoid fever, dysentery or infantile diarrhea could be disseminated by means of rectal and oral thermometers, bedpans, emesis basins, etc. Pyogenic microorganisms (such as staphylococci and streptococci) as well as pseudomonads could be transferred by surgical instruments, thermometers, bronchoscopes, etc., while respiratory pathogens such as pneumococci, streptococci, staphylococci, tubercle bacilli and others could be transported by oral thermometers, tongue depressors, broncho- and esophagoscopes, nasal instruments, etc. Pathogenic skin fungi could be deposited by carriers on floors, bath mats, bathtubs, as well as on instruments, appliances and objects of general use.

As to the second mode of the spread of infection mentioned, viz., droplet infection, it is known that forced respiratory action such as coughing, sneezing, or nose blowing, furnishes a most effective

means of dispersal of infective particles, although even simple speaking may cause their projection into the environmental air for several feet. Such sputum and mucus particles may carry staphylococci, pneumococci, streptococci, diphtheria and tubercle bacilli in addition to other pathogens. It has been demonstrated rather convincingly that most of the forcibly expelled particles sediment within a rather short period of time on floors, on blankets, on furniture, etc., often retaining their infectious potential for substantial periods. Only a comparatively minor proportion of the expelled droplets are small enough to dry out in the air, i.e., before settling on a surface; these may remain in suspension for a long time carrying pathogens as so-called "droplet nuclei" (7).

The third mode of infection, viz., the dust and lint borne variety, is actually derived from the second (8). The infection-laden particles of dry mucus, floor dust, lint from blankets, etc. are subject to redispersal into the environmental air, particularly if aided by natural drafts, by sweeping, by bed making, or by some other activity. There exists satisfactory experimental evidence showing that the bacterial counts, including staphylococcal, of the enclosing air are high under one or more of the conditions mentioned, and low when activity is at its minimum, e.g., in the middle of the night (9-11).

Antibiotics, Disinfectants, and Staphylococcal Sepsis

The problems of infection and cross-infection have been troubling hospitals long before the appearance of antibiotic drugs (12). However, following their introduction and extensive use, the situation became worse, owing to the unexpected emergence of bacterial strains resistant to the action of antibiotics. Hospitals, which have come to rely upon antibiotics as prophylactic weapons against infection, were confronted before long with a breakdown in the of-

fensive as well as in the defensive effectiveness of these drugs. Because of this, it is now neither safe nor proper to rely upon the prophylactic effect of antibiotics in view of the impressive record of a gradual acquisition by staphylococci of resistance to the different antibiotics which have been introduced successively in an effort to find the one antibiotic that would be active against all variants. Fortunately, some antibiotics are available which as yet have not been challenged by resistant staphylococci. However, it is only rational to demand that the use of such antibiotics be reserved primarily for the therapy of staphylococcal infections; their availability for this vital purpose should not be jeopardized by any indiscriminate routine prophylactic administration.

The essential difference between the situations existing in the immediate preantibiotic and the current antibiotic periods, is that in the former period hemolytic streptococci were quite often involved in infections and cross-infections, while in the present, the antibiotic era, the staphylococcal complications are in the foreground both in this country and abroad. This does not mean that sporadic outbreaks of endemic disease in hospitals may not be due even now to microorganisms other than the staphylococci, as witness the frequent reports on infantile diarrhea which are caused by pathogenic strains of *Escherichia coli* or *Aerobacter aerogenes*, including their antibiotic-resistant variants (13, 14).

At this point, some reference should be made to the action of disinfectants on antibiotic-resistant staphylococci. Recent reports indicate that staphylococci which have become resistant to several different antibiotics did not acquire, at the same time, any increased resistance either to phenol or to certain phenolic disinfectants studied (15). The results of one such report are condensed in Table 1 in which the staphylococcus strain 209 is of a standard variety, while

strains 138, 879 and 889 are resistant to several different antibiotics. The significance of this finding relates to the possibility of controlling environmental staphylococcal sepsis by means of disinfection, also of reducing air borne infection by disinfecting surfaces with a germicide capable of creating on them a residual antibacterial potential, as will be shown subsequently.

Criteria of Performance

How is the user of a "hospital disinfectant" to know that a particular product will actually furnish the kind of performance demanded under the circumstances?

Ever since disinfectants have come into general use, a series of methods have been proposed for their evaluation. Many of these methods have been discarded, some have been retained in modified form. It is not the purpose of this paper to give a historical review of these testing methods. However, reference should be made to some methods which are in use today, and which enjoy a measure of sanction, official or otherwise.

The labels of different disinfectants carry the legend: "phenol coefficient," with a figure after it such as 5, 6, 10, etc.

Phenol coefficient: What is this phenol coefficient? Unless otherwise qualified, it is a figure indicating how many times more effective a given disinfectant is than phenol (or pure carbolic acid) against the test organism *Salmonella typhosa*, the causative organism of typhoid fever; to obtain this information the test must be carried out under rigidly specified conditions of temperature, duration of exposure, resistance of the bacterial strain employed, and others.

It was thought, at one time, that this phenol coefficient could be regarded as a yardstick of a given disinfectant's germicidal potency, on the premise that the action upon the typhoid test organism paralleled that upon other pathogenic bacteria. Unfortunately, this utterly mistaken idea is still encountered in many quarters although it has been known for a long time that the assumption of any such parallelism is devoid of general validity (16). With specific reference to hospital disinfection, it should be noted that this concept is entirely fallacious in that it may not insure a bactericidal action upon the different pathogens whose control by means of disinfection is essential in certain phases of hospital practice; and this may include staphylococci, also pseudomonads,

tubercle bacilli, and others.

In the introductory comment on definitions, mention was made of the term "bacteriostatic," meaning inhibitory of bacterial multiplication, but without true killing action. The bacteriostatic effect is of great significance in testing disinfectants. Frequently it is overlooked, with the result that incorrect information is obtained as to the presumed bactericidal potency of a particular product.

The phenol coefficient testing method depends upon the demonstration of either survival or death of the test bacteria exposed to a disinfectant. A random sample is removed and placed in a test-tube containing fresh bacteriological medium capable of supporting bacterial proliferation. If those bacterial cells which survived multiply upon incubation, indications are the particular dilution was inadequate to produce true disinfection. If no multiplication in the subculture tube takes place, the dilution is assumed to be bactericidal.

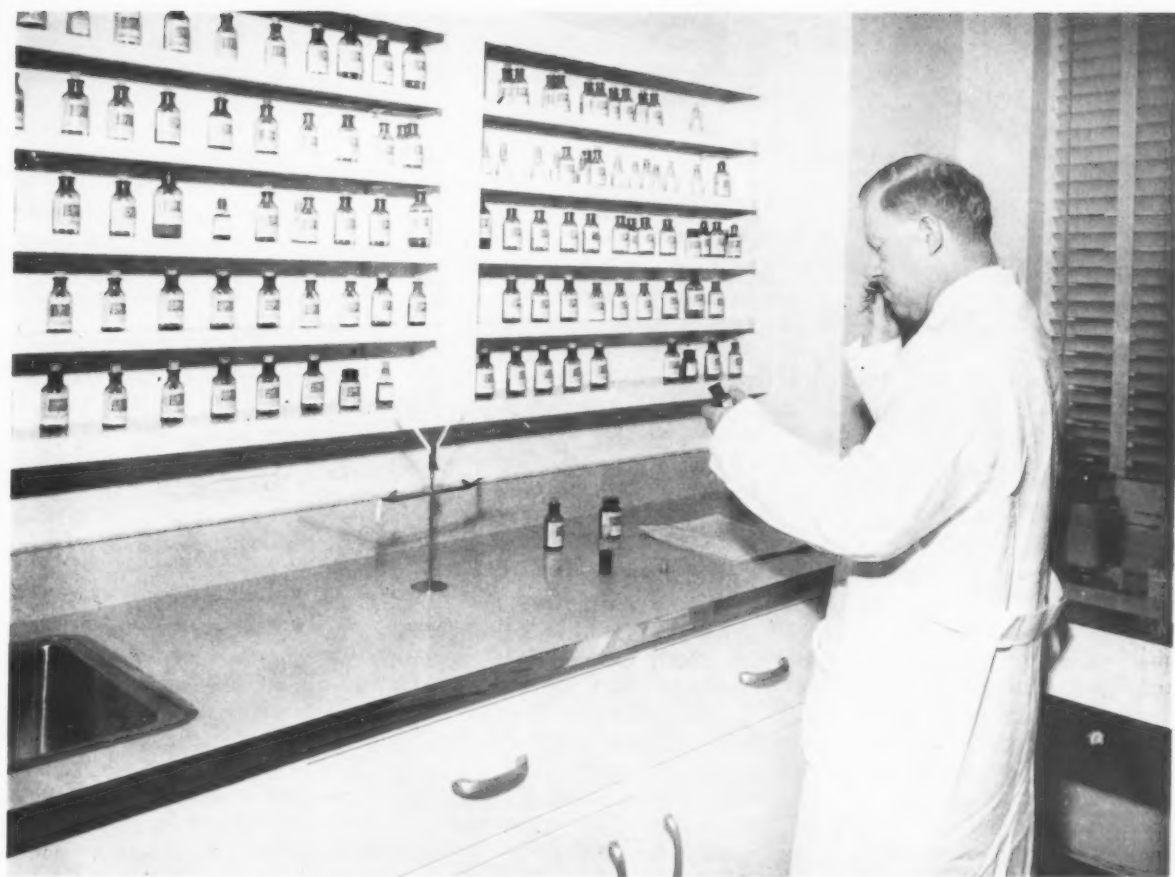
Whether or not this procedure is sufficiently similar to what one might encounter in practice is a moot question. The fundamental problem is not whether following exposure to a disinfectant there are bacterial cells left which will multiply in the bacteriologist's glassware, but whether those bacterial cells which have been exposed to the process of disinfection under the actual conditions of their occurrence, would become a source of potential harm, if subsequently they should find their way into a surgical wound, or onto a susceptible mucous membrane, etc.

In saying this, one cannot help introducing a factor of uncertainty with respect to bacterial death. And yet, one must not forget that a testing method, unless employed rationally, may give confusing results; thus, under a particular set of experimental conditions, the microorganisms, following exposure to a given disinfectant, may appear to be dead, while

(Turn to Page 104)

Table I. "Phenol Coefficient and "Use-Dilution" test with antibiotic-resistant staphylococci

Disinfectant by Type or Active Ingredients	Staphylococcus Strain No.	Minimum Concentrations Germicidal in Minutes			Dilution	Number of Rings Tested	Number of Rings Positive	
		5	10	15			Posi-	Nega-
Phenol U. S. P.	209	1:60	1:60	1:70	1:20	10	0	10
	138	1:60	1:60	1:60		10	0	10
	879	1:60	1:60	1:70		10	0	10
	889	1:60	1:80	1:100		10	0	10
o-Phenylphenol (p.c. 5)	209	1:150	1:200	1:200	1:100	50	1	49
	138	1:160	1:180	1:200		40	2	38
	879	1:160	1:200	1:250		40	1	39
	889	1:250	1:400	1:450		40	0	40
o-Phenylphenol and p-tert. amyl phenol (p.c. 10)	209	1:300	1:350	1:400	1:200	50	1	49
	138	1:350	1:450	1:500		40	0	40
	879	1:400	1:500	1:600		40	2	38
	889	1:600	1:600	1:800		40	0	40
o-Phenylphenol and cresylic acid (p.c. 5)	209	1:160	1:200	1:250	1:100	50	1	49
	138	1:600	1:200	1:200		40	2	38
	879	1:160	1:200	1:250		40	2	38
	889	1:300	1:350	1:500		40	0	40



On the perfume blotter, the perfumer smells a sample of his new creation.

Givaudan-Delawanna, Inc. photo

Fragrance in Aerosols

By E. R. van Liew and Victor DiGiacomo*,

Givaudan-Delawanna, Inc.

New York

REGARDLESS of what agreements or disagreements authorities may have concerning our prehistoric ancestors there is one point on which there appears to be no doubt whatsoever: — Man was given a sense of smell as a means of self protection. Being primarily carnivorous, one of the biggest problems of the so-called cave man was to supply meat for his family and tribe. Whether he hunted with stone, spear, or bow and arrow his quarry was good for just so many meals and man soon learned that eating meat that smelled unappetizing invariably re-

sulted in a bellyache or worse.

Since the sense of smell is so closely allied with that of taste it was inevitable that man would use his nose for the enjoyment of the better things of life. Just when man began to appreciate the fragrance of wild flowers is difficult to say. We know, however, from the earliest histories of China, India and, of course, from the Old Testament that it took man only a few hundred years to realize that certain pleasant smelling odoriferous substances could be extracted from

vegetable and animal matter and could be used to perfume objects (human or statuesque) either by direct application or with the assistance of fire.

Religious Use

Much has been written concerning the use of aromatics in incense and unguent forms, especially in connection with ancient religious services. From the worship of the gods the use of pleasant fragrances naturally gravitated to royalty, to the wealthy families,

*Paper presented during 45th annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 9, 1958.

and the priesthood. Too often we think of these usages in connection with the master races of their day—ancient Egypt, Greece, Persia, and Rome. It is interesting to note, however, that some twelve hundred years before Christ, the children of Israel whom we picture as a bedraggled, downtrodden and dirty mob, wallowing in brick makers clay and starved to the point of exhaustion, placed considerable emphasis on the use of aromatics in their worship of Jehovah. We are informed that when these people were released from their bondage and wandered for 40 years in the desert every family was well equipped with censers and perfumes to carry on their worship of Jehovah in the proper manner. The Book of Numbers goes into considerable detail on this subject indicating that certainly the head of each "family" had a censer.

The censers as used in the temples produced what might be called the first aerosol method of perfuming the atmosphere — if particle size is the correct determination of whether or not a product is an aerosol. Furthermore, we know that the Chinese, from the beginning of the Shang Dynasty, burned incense in their temples and in home shrines reserved for ancestor worship. It may be unkind, but it is probably correct to assume that consciously or subconsciously the worshippers were covering up their own body odors, and those of their sacrificial animals, in an effort to make their prayers more acceptable to the deity.

Middle Ages

Not too much is known of the use of perfumery during this period. The educational curve took a sharp drop and for several hundred years those who knew how to write devoted most of their time to the laborious long hand reproduction of religious and philosophical works. Personal deodorization, however, is mentioned in connection with the great crusades. It is known that the "Knights in

Armor" employed certain unhuman means of insuring the fidelity of their wives during their prolonged stays in the Holy Land. Frankish, British, and Germanic women had to resort to the use of effective deodorants to be able to live with themselves while their gentlemen were in distant lands slaughtering the Saracen (who was culturally far ahead of his European foes).

It is known, however, that at what may be referred to as the dawn of modern medicine certain aromatic herbs were used and burned for their therapeutic value. This is stage No. 2 in the development of the aerosol.

Modern Times

Some historians may disagree with me when I place this title at the beginning of the Age of Elegance. This age attained its summit in the days of Louis XIV, when gentlemen and ladies used perfume profusely. This was immediately followed by the Age of Foppery following Napoleon's reign. The theatres were designed with a view to separating the perfumed gentility from the unwashed peasant. The first production of Hamlet was enjoyed by the people of the day with the common man segregated in the portion known as the pit which eventually evolved to the modern orchestra. In the days of Napoleon one of the highlights of the intermission was the fumigation of the theatre. Perfume bullets were shot from conventional firearms and it was possible to permeate the atmosphere with the odor of lilac, rose, and carnation for the benefit of the guests. We may look upon this as the third phase of the development of the aerosol if particle size is a factor.

Our Times

Those who attended silent movies will remember that the poorly ventilated theatres had a "typical movie odor." This was a combination of the odor of damp clothing, humanity, and management's effort to overcome these

through the use of theatre sprays. These were usually made of aqueous solutions of inexpensive perfume compounds premixed in turkey red oil and sprayed throughout the premises with the help of a spray gun and a strong back. The perfumes used were cheap, heavy reproductions of rose, new mown hay, and clover. Despite their power and residual characteristics however, they never did quite succeed in covering the fatty odor of the water soluble agent.

Were today's public subjected to such odors, it would vociferously voice its objection to the theatre management. The public today is conscious of upgrading odor just as it is of improvements in refrigerators, automobiles, and now stereophonic high fidelity.

Not too long ago certain theatres were equipped with air conditioning systems in which outside air was passed over pans of cold water and blown into the theatre. There was an attempt made to incorporate water soluble perfumes in the water to perfume the theatre. This may be called the fourth step in aerosol development, but was relatively short lived because of the advances in modern air conditioning.

It is not surprising, in view of this formidable background of customs, that we who live in 1959 are such a ready market for the little gadget whose 10th anniversary is being celebrated this year.* Our extreme consciousness of all unpleasant odors has brought about the invention of personal deodorants, the acceptance of daily bathing as a must, the installation of exhaust fans in our kitchens, etc. We in the United States are still ready and willing to perfume, deodorize, and freshen the air we breathe.

Let us briefly review the most important successes of our gadget. Of these, the room deodorant is one of the largest individual

*Actually what was celebrated during the 45th annual meeting of the Chemical Specialties Manufacturers Assn. in New York in December was the 10th anniversary of the Aerosol Division of CSMA. Low pressure aerosols date back to about 1947, and high pressure aerosols were first available to consumers around 1945.

sellers. It would have been a complete and utter failure had it not been for fragrance, be it used in the home, in the theatre, or wherever large numbers of people gather. Certain germicides can be added to enhance further the functionality of this spray. Our gadget has even helped the weekly poker groups, since the accumulation of smoke in a living room is no longer a valid cause for nagging friend husband when he announces that the boys are coming over for an evening of stud. With three squirts the housewife can make her home livable the following morning.

The next truly important functional item is the aerosol insecticide. Anyone making a survey will find that the best sellers are those that have the most pleasant odors. Battling a dozen ferocious mosquitoes on a summer night is an aggravating experience. Disposing of these pests by the aerosol method is easy and effective. But sometimes the odor of the insecticide is almost as annoying to the humans who have to sleep in that room as the mosquitoes. Undoubtedly there are people who remember the day when all insecticides smelled like citronella or wintergreen. Neither one of these odors did a particularly good job of killing the stench of the crude kerosene base. They did an excellent job, however, of killing the sleep of the party who used the product just before bedtime.

Another important aerosol personal product is hair set. Realizing that the hair is the perfect carrier for fragrance, manufacturers of hair sprays saw to it that this experience should be pleasurable to the customer. Women now have a choice between aerosol hair sprays the fragrance of which disappears quickly, and those having a fragrance that lingers for a long time. In all instances, however, the base product is well covered!

Numerous other products which might be mentioned include: aerosol shaving creams, the fragrance of which is never mentioned by the man who uses them, but

which would not sell unless they were pleasant to his nose;—aerosol shampoos, creams and, of course, the most personal of all the aerosols, perfume or toilet water. Although fragrance has done much to assure the success of aerosols, aerosols in turn should do much to increase the sales of strictly fragrance products. Attractive purse size containers now available on a large scale should help. Women who have heretofore shied away from carrying purse size flaconettes of conventional perfume, lest spillage ruin the interior of an expensive handbag have little excuse now not to carry and use aerosol perfumes whether travelling or shopping. Incidentally, we in the fragrance business are indeed fortunate that the modern tendency of having panels of "inexperts" decide on what perfumes should be chosen for this or that use has not become widespread. Otherwise, new, intriguing, beautiful and different fragrances would never come into being since it is a common tendency for lay people to select the familiar as their first choice when it comes to fragrance.

Innumerable Problems

It is not amazing that innumerable problems faced the perfumer in adapting his fragrances for aerosol use. What is amazing is the relatively short time in which he solved these problems. Since this subject is of a technical nature it has no particular place in this discussion. Suffice it to say that we can now satisfy our desire for up-graded olfactive living thanks to this gadget whether we want to deodorize our homes or relieve our aching feet.

What about the future of aerosols? Obviously there is more to come and it is quite likely that the lady of tomorrow will tint her finger nails by means of the aerosol whose flow will be controlled so that just the right amount of polish will cover the nail. Special skin creams to cover freckles and blemishes will also be aerosol packaged, and it is likely that make-up prod-



Numerous problems face the perfumer in adapting his fragrances for aerosol use. To do so requires highly skilled personnel working in laboratories, such as this one of Givaudan-Delawanna, which are equipped to handle all phases of aerosols. Victor DiGiacomo, one of the authors, gasses a test aerosol.

ucts will be pressurized. An aerosol leg make-up and an aerosol depilatory will be instrumental in reestablishing the popularity these two items really deserve. The pet owner will benefit, and so will the pet, when we have available a full line of sprays, germicides, and shampoos, wet or dry, for Fido or the cat. We must not forget that aerosols are perfectly suitable for dispensing pharmaceuticals and edible products. In these areas the aerosol will find a very great potential for expansion.

In connection with the pharmaceutical field aerosols for inhalation purposes will require fragrant "medication"; in the food field the creations of some of the renowned French chefs may be packaged in aerosol to embellish a relatively uninspired meal through the addition of the rich and fragrant odors of the sauces. As for me I would personally like to see an aerosol that will dry out a Dry Martini composed of 100 per cent gin while imparting thereto a delicious flavor.

To turn to matters medical it seems to us that the storage of blood plasma in an aerosol package for dispensing at a predetermined rate will help the patient as well as save the time of the trained nurses who have to ad-

(Turn to Page 177)



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New attitudes toward

INSECT REPELLENCY

"And the Lord did as Moses asked, and removed the swarms of flies from Pharaoh, from his servants, and from his people; there remained not one." Exodus 8:31.

OUR present ideas of insect repellency have changed only slightly from those of biblical times. We still consider repellency in terms of personal human comfort—resulting from a material which repels *all* insects for a prolonged period. This is true in terms of human comfort since the bite of one mosquito can be as annoying or dangerous as three simultaneous bites of three mosquitoes or chiggers, or dog flies, or combination thereof.

However, a crack has finally appeared in the facade of our thinking. To understand the economic consequences of biting insect reduction as opposed to absolute repellency requires more than a single standard. There can be a standard for human comfort; there can be other standards for other living organisms. What is required and what has happily appeared in the past few years is a

*Paper presented during 45th annual meeting, Chemical Specialties Manufacturers Assn., New York, Dec. 9.

By Z. Z. Dworkin*,

Glenn Chemical Co.
Chicago

multi-valued orientation towards repellency.

It has been amply demonstrated in the past that if the number of biting flies on livestock can be reduced—we can increase production by these animals. For a long time we have known that persistent biting by flies affected milk production or beef gain, but everything was guesswork, and based on studies of short periods, usually 10 days to a single season. Now it isn't guesswork any longer, not since the Bruce-Decker paper (1) published in 1958.

Let's take the instance of milk production versus stable fly population. Does the stable fly cause loss of milk production? According to the work done over a three year period, there is no question about it.

In Figure 1 (1) are shown the average per cent differences in butterfat production between treat-

ed and check halves of herds from May through September each year for three years. This table seems self-explanatory, but two facts should be emphasized. As the summer progresses, the difference in milk production between treated animals and untreated cattle becomes more and more significant. By September it reached a substantial 23.3 per cent. The second point I want to emphasize is that the treated animals were by no means entirely free of flies. The average number of stable flies per treated animal ranged from 4.5 to 6.4 throughout the period. The average on the untreated animals was 17.9 to 29.3. It is the difference in fly population on the animals that obviously accounts for the difference in milk production. To obtain this increased production

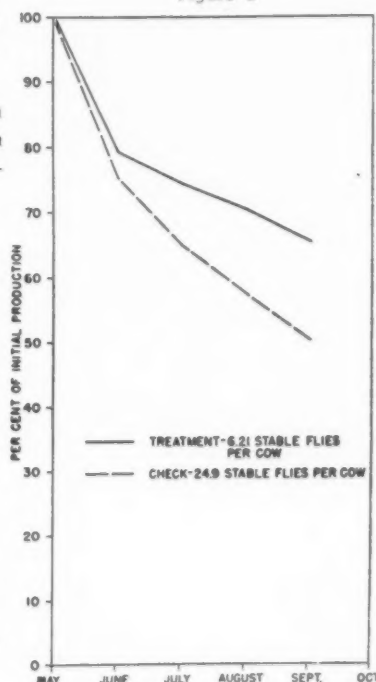
Figure 1

—Average per cent difference in butterfat production between treated and check halves of two herds, A and B, by months for 1955, 1956, and 1957 and the average numbers of stable flies for the same period.

	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Average per cent increase of treated animals over check animals	0.0	5.3	12.6*	18.0*	23.3*
Average no. stable flies per cow:					
Treated animals	9.5	5.6	6.3	6.4	4.5
Check animals	9.6	17.9	24.7	27.4	29.3

* Significant at both the 1% and 5% levels.

Figure 2





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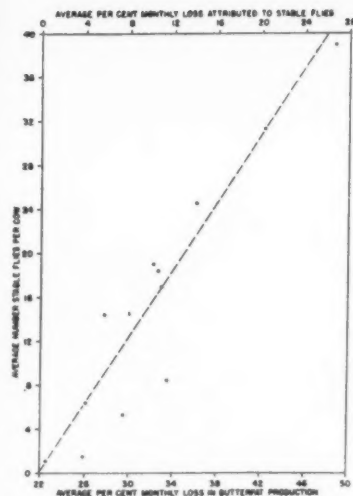
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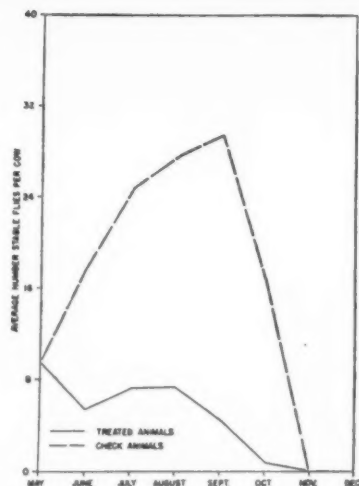
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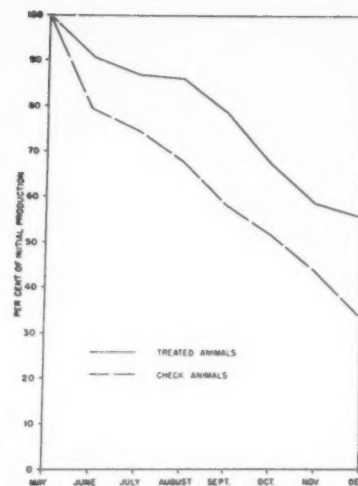
—Regression line showing the relationship between average numbers of stable flies occurring on the treated and untreated halves of two herds and the butterfat-loss gradients from May through September for 1955, 1956, and 1957. The losses indicate average monthly percentage drop in production from the production for the month of May.

Figure 3



—Average numbers of stable flies per cow occurring on the treated and untreated halves of two herds during the summers of 1955, 1956, and 1957. The stable fly population on the untreated animals shows the typical trend in fly counts for the period of May through October.

Figure 4



—The average per cent of initial butterfat production for treated and untreated animals within the same herd from May through December, 1956. The treated animals remained at a higher level of production during October, November, and December even though flies were no longer present.

Figure 5

it is not necessary that the cows be absolutely free of flies.

Now let us examine the same information graphically. In Figure 2 (1) we see that untreated animals become progressively and increasingly less productive than the treated animals throughout the course of the summer.

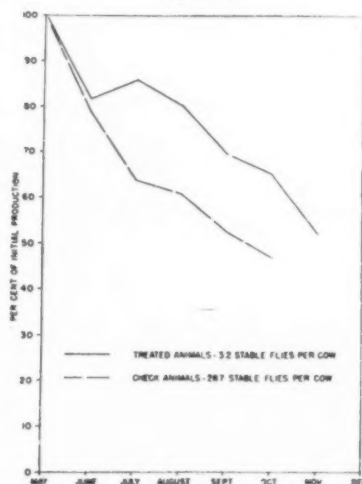
It has been shown that the average milk cow loses about 22 per cent in butterfat production naturally throughout the summer without the influence of flies. A regression line for the relationship between numbers of stable flies and the butterfat loss gradient for the same months during the same successive three years is shown in Figure 3 (1). For example, when the average fly count per animal is 17, butterfat loss is 33 per cent or 11 per cent greater than the normal 22 per cent. When the average fly count is 39, butterfat loss climbs to about 48 per cent. This is conclusive evidence that butterfat loss depends very much on fly population.

Shown in Figure 4 (1) is the average number of stable flies per cow on treated and untreated halves of two herds during the same months in three successive years. Please note here, too, that treated animals are not necessarily

free of flies; however, the number of flies on treated animals throughout the summer is very significantly lower than on the untreated animals.

We would naturally expect that repellent treated cattle would produce more butterfat during the fly infested summer months, but what happens after the fly season, in October, November, and December—when flies are no longer present, when cows are no longer sprayed?

Figure 6

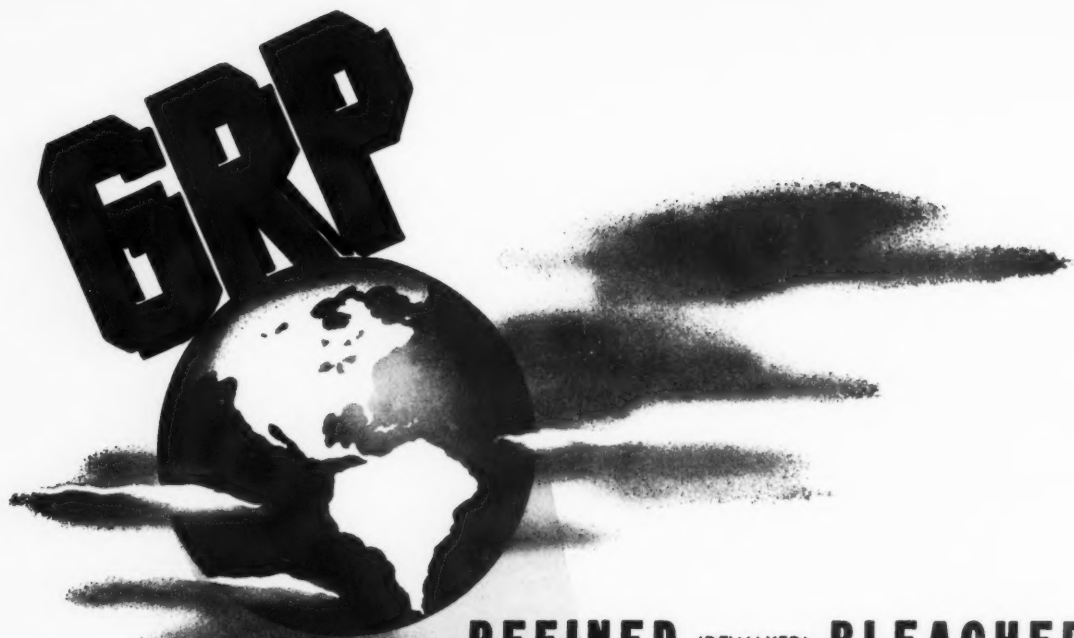


—The average per cent of initial milk production for animals in a treated and untreated herd. The animals in the treated herd remained in production longer than those in the untreated herd. *Fabaeus subdifferens* Macq. were found on the untreated animals during the last 2 weeks of June and July.

Many farmers feel that butterfat production picks up at the end of the fly season, but in Figure 5 (1) we see that butterfat production continues during the winter months to be considerably lower among the untreated animals. When you think about this for a moment, it must be true, since a cow is not a machine. You don't just pour in so much coal and obtain an equivalent quantity of BTU's. A cow, like other living organisms, is an infinitely complex mixture of physiological, biological, chemical reactions and interactions. Once her production has been depressed due to attrition caused by biting flies, the sudden release of this pressure will not increase her production. Her production remains below her potential as she continues toward her drying out period.

Of equally great economic significance is the fact that treated herds can be milked for a longer time — their economic lactation period will extend for one to two months longer than nontreated herds.

If a farmer were to consider his herd no longer economically productive when it reaches 50 per cent of its May butterfat production, as is shown in Figure 6 (1),



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he would take the check animals out at the end of September. However, he could continue to milk treated animals for an additional six weeks or until November 15 before taking them out of production.

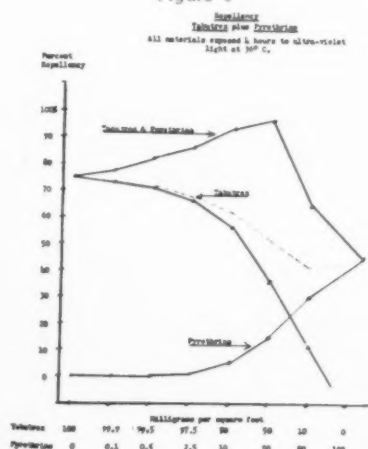
What were the treatments used? Right hand column (Fig. 7) gives the average number of stable flies on treated and untreated herds during the three year study, the left hand column gives the herd number. Notice that the lowest numbers of stable flies are found on herds designated II - IV - V - X - XII - XIII and XV. But for all practical purposes the results in herds II - IV - V and XII can be ignored because the formulas used are far too costly for commercial use. They are expensive research formulas, not commercially available products. That leaves three herds on which a commercially priced spray was used with good results: X, XIII and XV.

The foregoing series of figures demonstrate clearly that formulators can at last manufacture and merchandise sprays which bring 10 to 20 per cent more money to farmers. A farmer spraying his animals with a good repellent spray can reduce biting flies in the pasture, and put more milk in the pail or pipeline.

Before "Tabatrex"® repellent was made available commercially, many additives had been

*Registered trade name, Glenn Chemical Co., Chicago.

Figure 8



FEBRUARY, 1959

—Milk production gradients of animals in continuous lactation, with the average number of stable flies found upon cattle among various herds for 1955, 1956, and 1957.

HERD	YEAR	No. of Animals in Continuous Lactation	Per Cent Active Insects on Fly Spray	Production Loss, June 1 to Sept. 30	Average Number of Stable Flies per Cow from June 1 to Sept. 30	
I	1955	7	0.0	pyrethrins	91.4	9.9
II	1955	10	0.0	pyrethrins butoxide	91.4	9.9
			0.0	R-2000		
III	1955	5	0.0	M.C.E.	15.7	0.8
			0.0	pyrethrins		
IV	1955	6	0.0	pyrethrins butoxide	80.6	0.1
			0.0	pyrethrins		
			1.0	R-2000		
V	1955	91	1.0	M.C.E.	90.3	6.7
VI	1956	7	0.0	above	89.4	4.6
VII	1955	11	0.5	Nike	91.1	53.5
			0.0	pyrethrins butoxide		
VIII	1956	0	0.0	pyrethrins	95.6	14.1
			0.0	pyrethrins butoxide		
IX	1956	2	0.0	pyrethrins butoxide	66.6	16.3
			0.0	pyrethrins butoxide		
X	1956	10	0.0	pyrethrins	36.9	16.0
			0.0	pyrethrins		
			1.0	Tabotex	53.0	0.5
XI	1956	9	0.0	Nike	52.5	60.7
			0.0	pyrethrins		
XII	1957	15	0.0	pyrethrins	90.7	3.2
			0.0	pyrethrins		
XIII	1957	8	0.0	Tabotex	10.0	9.6
			0.0	pyrethrins butoxide		
XIV	1957	8	0.0	pyrethrins	80.1	15.4
			0.0	pyrethrins		
			0.5	Tabotex	19.6	5.4
XVI	1957	0	0.0	Nike	54.1	52.6
XVII	1957	5	0.0	Nike	46.2	56.3
XVIII	1957	0	0.0	Nike	36.6	6.0

* Production loss gradient = (100 - average (6 mm.) production gradient (% of June 100), June 1 to October 31.
 † Mean difference for significance among production gradient of herds. 5% level = 0.43%, 1% level = 11.04%.
 ‡ Correlation coefficient $r = .809$, required for significance, 5% level = .689, 1% level = .889.
 § D.D. = group (D.D. = D.D.).
 ¶ D.D. = group (D.D. = D.D.).

Figure 7

tried with it to lower the use concentration level and yet not reduce its efficiency. Among the additives which gave the desired results were oleic acid and "Crag"®. However, in the spring of 1957 "Crag" had not been approved for use on dairy animals and so oleic acid was used. This created a minor difficulty with some formulators since the available grades ranged from cheap murky red oils to the clear double distilled grades. The use of some grades of oleic acid sometimes presented an odor problem. It was reported that some cows refused to enter a barn which had been sprayed with a "Tabatrex" formula. In another instance two cows in a herd became nervous and jumpy after being sprayed with a straight "Tabatrex"-oleic acid formula.

The Pesticide Regulation Section, USDA, has now approved the unit for unit substitution of "Crag" for oleic acid in "Tabatrex" formulations.

Although these reports were few and isolated, we immediately investigated and discovered that when insecticides, particularly heat labile ones such as pyrethrins, were added to "Tabatrex", equivalent repellent action was obtained without the use of additives.

®Registered trade name, Union Carbide Corp.

Figure 8 (2) illustrates how repellency is increased when combinations of "Tabatrex" and pyrethrins are utilized, particularly after long exposure to ultraviolet and high temperature, two environmental conditions which cows encounter in the pasture.

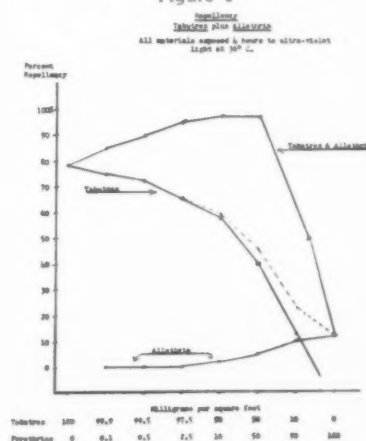
A similar phenomenon, recorded in Figure 9 (2), takes place after long exposure to ultraviolet and high temperature when a combination of "Tabatrex" and al-lethrin is used. The same general configuration is shown after exposure of these materials to 10 hours of ultraviolet at similar temperatures. And it is repeated with "Lethane"®, "Thanite"†††, and malathion. We began recommending combinations of insecticides and "Tabatrex" for entomological reasons, but also because this type of spray had greater sales appeal to farmers.

Selling repellency to the industrial and farm market requires a much greater degree of sales sophistication than has been inherent in the insecticide spray trade. For those who want to see a repellent spray actually knock down and kill flies, the addition of insecticides is mandatory. But the fortuitous discovery that this addition also increases repellent efficiency on the cow long after spraying, makes such a spray easier to sell and

®Registered trade name, Rohm & Haas Co.

††Registered trade name of Hercules Powder Co., Wilmington, Del.

Figure 9



81

NEW AMP FLOOR WAX EMULSIONS

**Develop
Water Resistance
Fast!**

Cost Less!

A new method for using 2-Amino-2-methyl-1-propanol in floor wax emulsions, developed by CSC's Research Department, has opened the way for a greatly improved product. The new method consists of slightly reducing the AMP content and incorporating aqua ammonia. The result: wax with excellent water resistance which develops very rapidly after the wax film is laid down.

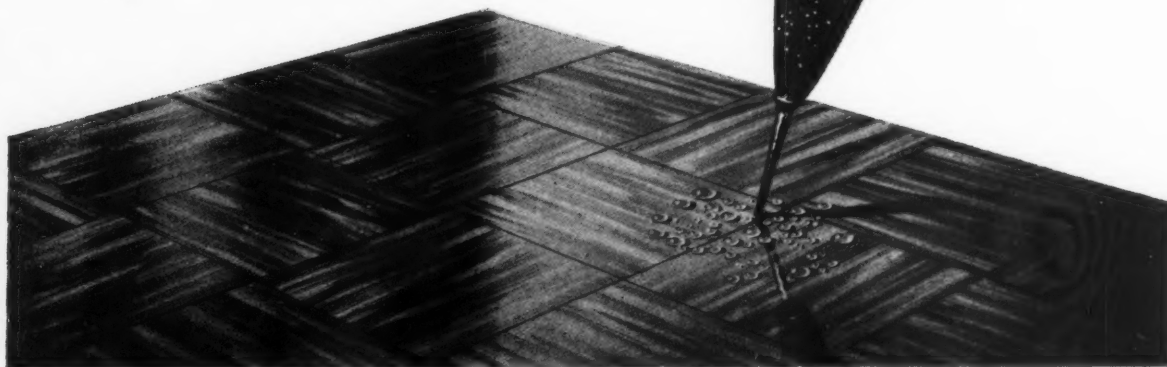
In addition to the rapid development of water resistance with the new AMP-ammonia formulations, considerable savings in costs may be expected since less AMP is required. Other performance char-

acteristics of the AMP-ammonia formulations such as shelf-life, freeze-thaw resistance, leveling, and gloss were fully equal to the best commercial formulations.

Proved By Performance Tests

In a series of tests, the new AMP-ammonia formulation attained "excellent water resistance" in less than *two-thirds the time* required, and at *one-third the cost* for amine when compared with a typical formulation using morpholine. A new technical datasheet describing these and other tests made with typical commercial formulations is available on request.

DISCOVER THE NITROPARAFFINS!



INDUSTRIAL CHEMICALS DEPARTMENT

COMMERCIAL SOLVENTS CORPORATION

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entomologically better. We want to keep biting flies off cows in the pasture where the girls manufacture milk. The barn is merely the delivery room where they bring the fruits, or rather the milk, of their pasture labors. They are in the pasture factory for 10 or 11 hours, and are only in the barn delivering for an hour or less.

This peculiar phenomenon with combinations of repellent and pyrethrins—a mutually sustaining result obtained by the combinations—led us to explore the use of such formulas in thermal foggers; those which depend on heat, flame, steam, or hot plates for spray generation. Our work has successfully shown thus far that it is possible to reduce the levels of pyrethrins, normally present in such formulations, because of the protection to pyrethrins breakdown offered by the "Tabatrex" content.

Effective economic repellency on animals is not the same as repellency for personal comfort on humans. It is not necessary to have complete or absolute freedom from flies to obtain increased production. Yet how can we get this simple but vital economic message to manufacturers and formulators, and to the farmer who must use these sprays in order to get the money. An educational program to manufacturers, to agricultural leaders, and a consumer education program through public relations and advertising is required, and we have one ready. A coordinated advertising and public relations plan similar to our 1958 program is presently under way. Millions of farmers and ranchers will read and hear about the economic consequences of repellent sprays.

Another method of convincing manufacturers and consumers of the many valuable uses for repellents is to attempt the marketing of new repellent products directly to the public. This has been done, too. A combination insecticide-repellent was marketed directly to soft drink bottlers during the past summer. It successfully demonstrated to a number of hesitant

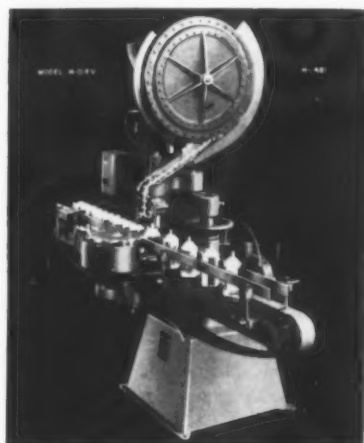
manufacturers that a market existed for this product—that it solved a particular problem which could not be solved before, or solved it better, or at less cost. Our results have been disseminated widely to industrial insecticide manufacturers, and several of them have begun marketing a similar spray as we have withdrawn from this new consumer field. As other opportunities present themselves, we will undoubtedly market repellent formulations in the new fields, and make available to our customers the results of our consumer sales effort.

I would like to close by

New Valve Capping Unit

A new capping unit which handles up to 120 aerosol valves per minute has been developed by Consolidated Packaging Machinery Corp., Buffalo, N. Y. Designated "Model H-O-FV," the unit sorts and applies all types of aerosol valves that do not require dip tubes.

A sorting hopper, conveyor, and inserting mechanism are included with the machine, which is equipped with variable speed drive for synchronization with related equipment. According to Consolidated cans of the same diameter, but with varying heights, can be handled with the same star wheel arrangement. Changeover time for different size cans is reported to be three to five minutes. Consolidated is located at 1400 West Ave., Buffalo 13.



quoting from an article which appeared in *Soap and Chemical Specialties* in April 1958:

"Repellency is new. It is important. But it needs to be viewed in its proper perspective. If repellent materials are used as repellents should be used, if their performance is weighed according to their potential benefits, if their advantages and limitations are clearly understood . . . they cannot help but contribute immeasurably to increased production and profits for the dairy and livestock farmer, and also provide broader commercial markets for professional workers in insect control."★★

References

- (1) Bruce, W. N. and Decker, George C.: "The Relationship of Stable Fly Abundance to Milk Production in Dairy Cattle," *Journal of Economic Entomology*, Vol. 51, No. 3, pp 269-274, June 1958.
- (2) Livestock Conference Report, February 21, 1958, Glenn Chemical Company, Inc.

— ★ —

Milner Expands Overseas

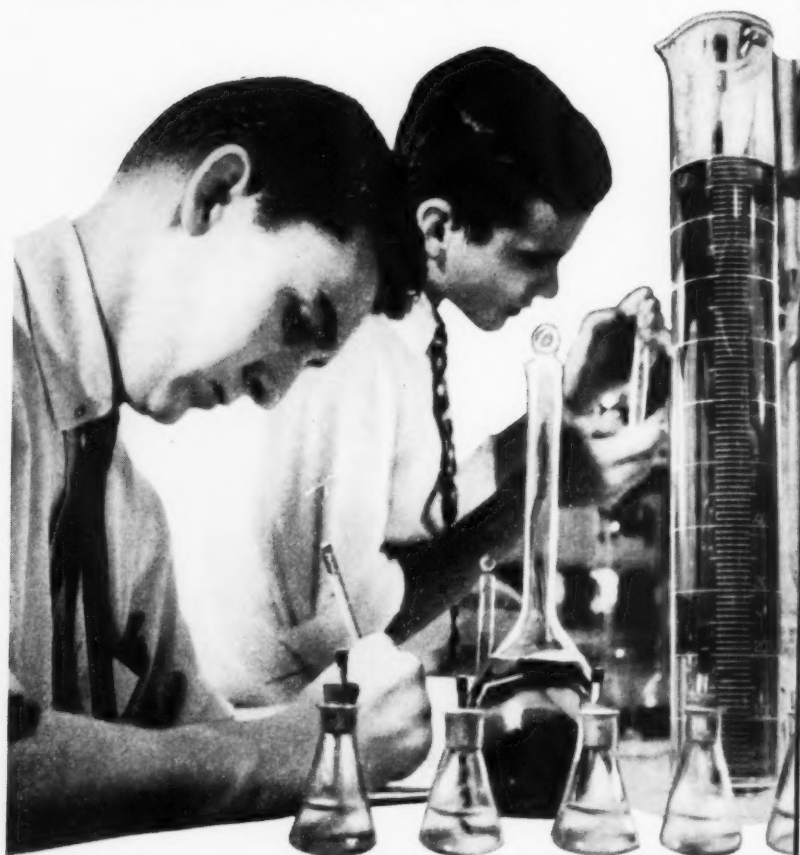
Dumas Milner Corp., Jackson, Miss., has established a foreign operations division which will introduce an advertising and marketing program for the firm's products abroad, it was announced last month by Howard S. Cohoon, president. A foreign advertising budget of \$250,000, about 10 per cent of its total annual program, has been scheduled by Milner.

Direct selling and advertising through door-to-door campaigns with subsequent support through traditional advertising methods has been determined as the most practicable approach in areas abroad, according to Mr. Cohoon. Such programs are being conducted now in Central American countries and the firm contemplates introducing this approach in Europe, Africa, and the Far East. As a first step in penetrating these markets, Dumas Milner is sending its own trained men to make initial sales and contacts, guide the choice of advertising media and approach, and adapt the marketing program to local conditions.

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WAX FACTS

NEWS OF INTEREST TO WAX USERS —
DEVELOPMENTS IN THE FIELD OF SYNTHETICS

In Dry-Bright Floor Polishes:

Special Issue—S2/59

THE 1960 PRODUCTS—YOURS TODAY

By Irwin Y. Straus

Today's trend in dry-bright floor polishes presents an interesting challenge. Wanted are products which combine the durability of waxes with the brilliancy and depth of plastic floor dressings. Consumers, both in the industrial maintenance and household fields, are demanding floor polishes which dry to a high gloss and still look good after months of traffic. They want no discoloration of popular white and grey floors. They demand water resistance and easy removability.

How far have we advanced technologically to meet these demands? Can hardness be brought into harmony with buffability? Can water-repellency be combined with removability? Can non-discoloration be achieved at sensible costs? Surveying the market the answer would seem to be "No."

Now, however, the all-new formulations with DUROXON® hard-wax make every conventional wax and resinous polymer product obsolete. At last, you can give your floor-polish customer what he has wanted for years:

1. Deep, Brilliant Gloss on Drying; Glass-Clear Film.
2. No Brown Spots; No Discoloration of White Floors.
3. Hard-Wearing Surface; Resistant against Flaking, Powdering, Heelmarking.
4. Full-Spectrum Maintainability by Buffing, Steel-Wooling, Damp-Mopping.

Yes, but what about product appearance, water-resistance, removability, leveling, oven-stability, freeze-thaw? Here are the answers from a leading laboratory which has exhaustively tested the new Duroxon polishes:

TEST REPORT BY INDEPENDENT LABORATORY

TEST PERFORMED:

Product Appearance
Water Resistance
Removability
Leveling on Asphalt, Rubber, Linoleum
and Vinyl tile
Oven Stability, 125°F
Freeze-Thaw Stability

RESULTS WITH DUROXON FLOOR POLISH 18% SOLIDS:

White, translucent.
Excellent within 4 hours
Complete, 75 strokes

Excellent
OK minimum 30 days
OK three cycles

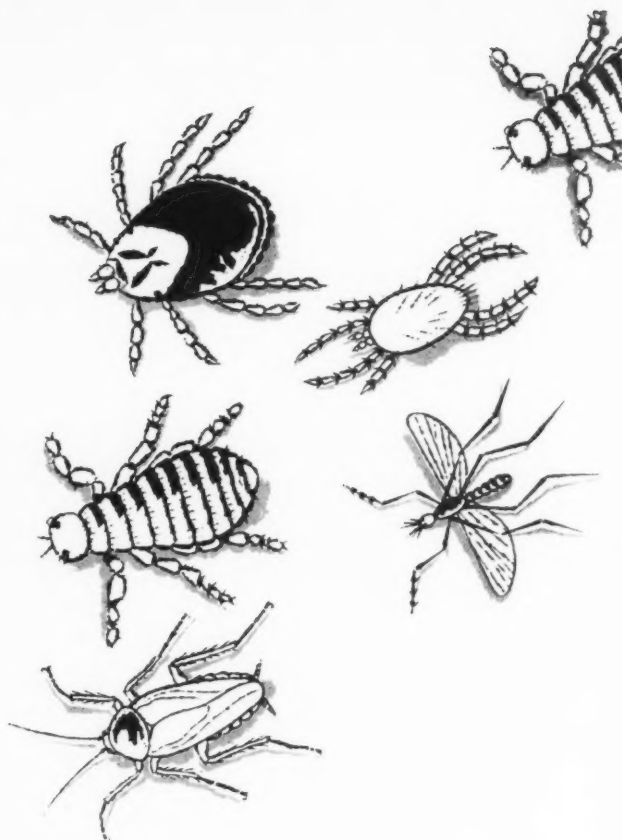
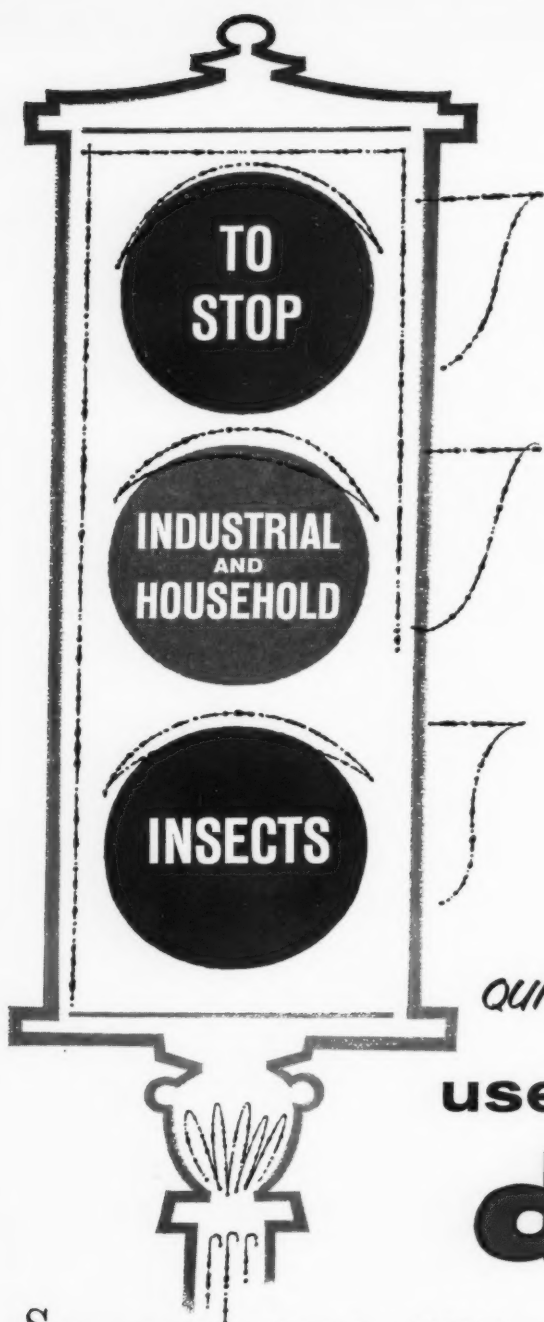
Formula Cost? Way lower than using conventional, dark-colored vegetable wax! Lower than most resinous polymer products!

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Braun-Knecht-Heimann Co., San Francisco—Salt Lake City—Denver
New England States: Roger A. Reed, Inc.—Medford, Mass.
South-Eastern States: Triangle Chemical Company, Atlanta, Ga.
Canada: Davies, Irwin, Limited, Montreal—Toronto
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Labeling Automotive Chemicals

By **Nicholas M. Walker***,

Pennsalt Chemicals Corp.,
Philadelphia

THE title of my paper is very broad and could cover a variety of labeling problems. However, the subject matter which will follow will be limited to labeling of automotive products which have hazardous properties, and the information which should appear on all labels for these substances so that anyone handling, using or storing these can do so safely.

Actually, the labeling of automotive chemicals is no different from the labeling of any other chemicals. To label any chemical adequately, its properties must be known. What are its chemical and physical characteristics? Is it a solid, liquid or a gas? If a solid, is it dusty? If a liquid, what is its vapor pressure? Is it an acid or alkali? If it is a mixture of chemical components, what is the physiological or toxicological activity of the whole as compared with its component parts? The toxicologists tell us that it is not reliable to attempt to predict the properties of the whole on the basis of its parts. Many times, even most of the time, you may be right but sometimes you will be wrong with disastrous consequences. A complete toxicological discussion is not the object of this paper and that which follows is based on the assumption that the manufacturer

knows his product and its hazardous nature.

Assuming then that you have completed all necessary physical and toxicological studies of your product, how do you go about deciding whether or not it is a hazardous chemical product?

In the labeling field, the term hazardous substance has been broken down into what are now several well-defined and generally accepted classifications.

When we are talking about hazardous substances, we are talking about those which are toxic, corrosive, irritant, flammable or generate pressure in some way or another. These are the classes of hazard people using your product are likely to encounter.

The term "toxic" applies to any substance which has the inherent capacity to produce bodily injury through ingestion, inhalation or absorption through the skin. Examples of toxic substances are carbon tetrachloride, chlorine, benzene and many others.

The term "corrosive" means any substance which in contact with living tissue will cause substantial destruction of tissue by chemical action but does not refer to action on inanimate surfaces. Examples of corrosive chemicals are caustic soda and sulfuric acid.

"Flammable" applies to any substance which has a flashpoint of eighty degrees Fahrenheit, or below

as determined by the Tagliabue open cup tester. Examples of flammable substances are xylene and methyl alcohol.

The term "extremely flammable" applies to any substance having a flashpoint at or below twenty degrees Fahrenheit as determined by the Tagliabue open cup tester.

The term "irritant" means any substance not corrosive which in contact with normal living tissue will induce a severe local tissue reaction. Formaldehyde and phosphoric acid are examples of irritants.

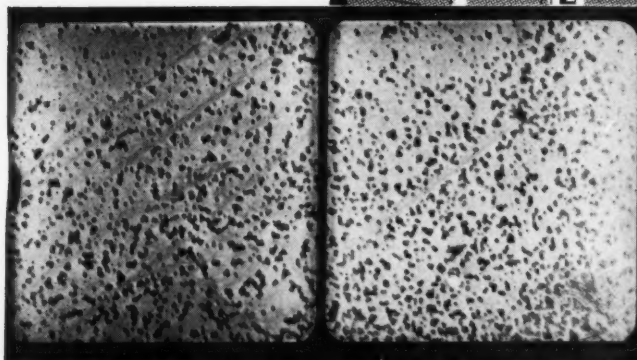
Recently a new hazard, that of sensitization, has been added and probably will be a requirement of law or regulations in the future. Because of the difficulty of predicting sensitization in advance, such laws or regulations will give the administrator power to name certain chemicals sensitizers based on actual past human experience with the particular chemical.

These then are the types of hazard with which the handler of chemicals may be involved.

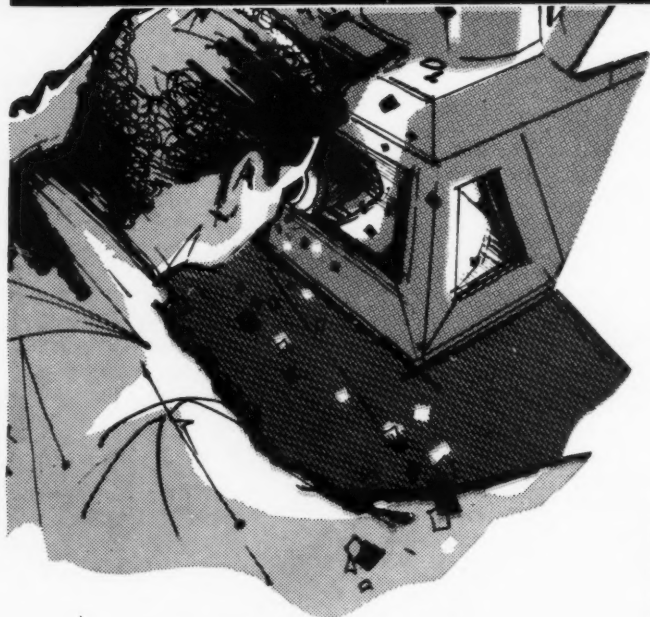
Writing the Label

Now that you have studied your product and know its physical and chemical characteristics, the next job is to relate these properties to the various classes of hazards and write a label to protect the user from them. Some might assume

*Paper presented during 45th annual meeting, Chemical Specialties Manufacturers Association, New York, Dec. 10, 1958.



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PARTICLE SIZE, HIGH
STABILITY LATICES
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Electron micrographs of RWL 100.
Particle size below 0.04 microns.

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Sodium sulfate (salt cake) • Hydrochloric acid
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Diazo chemicals • Cuprous iodide
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**WOODSTOCK, ILLINOIS
LABORATORY**



MORTON'S RWL LATICES

**Modified Polystyrene RWL 100, RWL 108
Acrylic RWL 200**

If your company formulates polymer floor polishes, then you should consider a latex from the Morton Chemical Company. The RWL series—consisting of modified polystyrene and acrylic emulsions—are now widely used by large corporations and highlight such properties as—

Modified Polystyrene Latices:

ultra small particle size . . . excellent stability
. . . are readily formulated.

Acrylic Emulsions: Impart to Floor Polishes:
crystal clarity . . . bright, tough, films . . . non-
yellowing with age . . . ease of removability.

Our technical staff will be glad to show you how these latices can help you formulate a floor polish to maximize the properties you desire. Get the full story on Morton Chemical Company's latices. Your letter or wire will receive immediate attention.



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SOAP and CHEMICAL SPECIALTIES

this to be a relatively simple job and that all you need to do is mark a hazardous product "Poison" and add the Do's and Don'ts. Unfortunately, the problem is more involved than that.

What are the meanings of the terms used? What, for example, is a "poison"? Chemicals may be harmful in a variety of ways. A product which may threaten your life solely by ingestion should not be labeled the same as one that may kill by absorption through the skin. Of course, there is also the matter of degree. How shall we distinguish between the vapor or gas which asphyxiates and one which causes cyanosis?

There is a difficulty of language. Statements must be brief but accurate. They must be expressed in terms the ordinary person will understand. Not only are the statements intended to help avoid accidents but if they do occur we do not wish first aid delayed while someone hunts for an interpreter.

In the case of trade-named chemicals or proprietary compounds, what is our responsibility to the doctor who may be asked to treat persons injured by them?

As a result of these and many similar questions the principles given below were adopted by the Manufacturing Chemists Association and are set forth in detail and comprise Part I of its manual, *L-1 Warning Labels*.

1. Each chemical product presents a distinct problem and must be treated individually in the light of its own characteristics. Mixtures may have properties differing from those of their components.

2. All statements should be brief, accurate, and expressed in simple, easily understood terms. Uniformity in language to indicate the same hazard and same degree of hazard is important in order to increase understanding.

3. Precautionary labeling should be used only when and to the extent necessary. The undeserved use of warnings will develop a disregard for them.

4. The word "POISON" has been used indiscriminately in the past and its meaning has been ill-defined. For labeling purposes the MCA Manual recognizes poisonings by three modes of entry, viz, ingestion, inhalation, and absorption through skin, but limits use of the word to those cases where the toxicity has been demonstrated, either by human experience or laboratory animal tests, to exceed certain defined limits.

5. A non-descriptive code designation or trade name should not be used as the only identification of a hazardous chemical since hidden identity could hinder medical treatment in event of accident.

6. Warning statements should be prominently located and should be printed in easily legible type which is in contrast by typography, layout, or color with other printed matter on the label.

The plan of precautionary labeling recommended by the MCA and adopted into law in several states considers for inclusion on a label a number of statements providing certain classes of information. (The laws commonly call a package the label of which does not carry this information a misbranded package.) The first is the name and place of business of the manufacturer. This is essential for enforcement purpose of any law. The second is the name of the product. This should be the chemical, common or generic name of each substance which contributes substantially to the hazard. As we all know, it is common practice in industry to use tradenames. Where a nondescriptive name of this type is used, it should never be the only identification of a hazardous chemical. In addition to the code or trade designation, at least the type of chemical should be clearly stated on the label; for example, corrosive acid, lead compound, or fluoride—some designation which will provide necessary information for treatment in case of accident.

The third suggested portion of the label consists of a so-called

signal word which is used to draw attention to the presence of a hazard and to indicate the degree of severity. The more serious hazards are indicated by the use of the word "Danger" and less serious hazards are indicated by the use of the words "Warning" and "Caution." They do not indicate the nature of the hazard but do call attention to the presence of a hazard and its severity.

Following the signal word is a statement of the hazard or hazards which are present in connection with the customary or reasonably expected handling or use of the product. These statements should be brief, such as "Causes Burns," "Vapors Extremely Hazardous," or "Rapidly Absorbed through the Skin." Many chemicals present more than one type of hazard, and a single statement often will not adequately cover the situation. Then statements for each significant hazard present should be included.

While any compound may possibly be hazardous if improperly used, it is, of course, impractical to cover every conceivable contingency on a label, and if there is too much on a label, the result may be that it will not be read. The customary or reasonably anticipated handling or use of the individual product should determine the selection of the proper statements.

Precautions

Following the listing of hazards, a statement or statements indicating the measures which should be followed or avoided to prevent injury from hazards should be included. These precautionary measures are intended to supplement the hazard statements.

In some instances it is desirable to add brief instructions, such as first aid measures to be taken in case of contact or exposure. The primary purpose of a precautionary label is to prevent injury or damage; and such injury may often be prevented even in

(Turn to Page 168)



**ITS LOW PRICE ASSURES YOU OF
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This fine reodorant saves you money and gives your products a popular, distinctive fragrance that has definite *sales appeal!*

CITRASCENT has a truly lasting fragrance—with more "lift" . . . it is uniform and stable in odor value and provides complete freedom from discoloration in soaps.

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Report of CSMA Secretary

THE year 1958 has been one of progress and, I believe, one in which much has been accomplished by the Chemical Specialties Manufacturers Association.

In order to keep the membership fully informed on the topics in which they are interested the executive office has issued 201 bulletins during 1958. The responses to some of these clearly indicate the value of the bulletins and the fact that they are appreciated by CSMA members. The legislative bulletins appear to be regarded as particularly valuable by CSMA members. In general the membership is fully advised at all times via bulletins regarding pending and enacted laws as well as regulations issued pertaining to our activities, under the scope of the laws.

The membership of the CSMA continues to increase in a steady and progressive manner. The indications of a decline in business volume brought several

By H. W. Hamilton*,

Secretary,

Chemical Specialties Manufacturers Assn.

Breakdown of CSMA Membership for Past Three Years

	November 15, 1956	November 27, 1957	December 3, 1958
Active	245	245	245
Associate	117	120	129
Foreign	21	23	32
Honorary	6	6	7

resignations at the beginning of 1958. Several of these companies have indicated their intention to return to participation in membership, or already have done so. The membership of CSMA on December 1, 1956 was 389; on December 1, 1957 it was 394, and December 1, 1958 it had risen to 414. At this time we have exceeded the 400 figure for the first time. There are

a rather increasingly large number of companies who have indicated interest in membership. A breakdown of CSMA membership by classes for the past three years is shown in the accompanying table.

In the field of publications prepared and made available to CSMA members 1958 has been a very active year. As usual, each member company is offered a copy

*Presented during the 45th annual meeting of Chemical Specialties Manufacturers Assn., New York, Dec. 10, 1958.

Photographs, at right, were taken during 45th annual CSMA meeting in New York.

Left to right, top row: Quaid Bloom, Fries & Fries, Inc.; Norbert Steinhauser, Tidy House Products Co.; Robert G. Fries, Jr., Fries & Fries, and Ray Morris, Orbis, Products Corp. Abraham Winer, Puritan Distributing Co., Aerosol Filling Div.; Mrs. Centa Isermann, Van Dyk and Co.; J. Lyons, General Aniline & Film Corp.

Second row: Henry E. Blanchford, Mac Lac Co.; Joseph Minnelli, Oil Specialties & Refining Co.; Phillip H. Harris, Mac Lac; Joseph Green, Oil Specialties; Jacob Kahn, Windsor Wax Co. Henry Eickmeyer, Schimmel & Co.; Frank Stebbins, Fritzsche Brothers, Inc.; Scott Avery, Pennsylvania Refining Co., and Robert E. Clark, Semet-Solvay Petrochemical Division, Allied Chemical Corp.

Third row: Albert E. Osman, Scranton Corp., Aerosol Packaging Div.; Leonard S. Baer, Precision Valve Corp., and Edward F. Heller, PowrPakConnChem, Inc. John Struthers, John Struthers and Co., Ltd.; Joseph E. Lee, McLaughlin Gormley King Co.





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of every publication without cost; additional copies are made available at special member prices to take care of the costs. Non-member companies are offered the publications when supplies are available. Eleven such publications were issued during 1958.

Membership of CMCS

In 1958 the Canadian Manufacturers of Chemical Specialties Association was formed by the Canadian firms engaged in businesses similar to the CSMA members. We are much pleased that we could help with the details of their organization. The CSMA

Publications Issued in 1958

Revision 7—Compilation of Economic Poison Laws
Symposium Ethylene Oxide Based Surface Active Agents
44th Annual Meeting Proceedings, Hollywood, Fla., December, 1957.
44th Mid-Year Proceedings, May 1958, Cincinnati, Ohio
Revision No. 1—Compilation of Brake Fluid and Anti-Freeze Laws
Symposium on Food Aerosols
Symposium on Analytical Methods for Surfactants
Composite Index of Proceedings 1950-1957
Labeling Laws and Regulations for Hazardous Substances
Agencies and Regulations of Interest to the Aerosol Industry
Vendors to the Trade—1959

does not in any way participate in the official activities of the Cana-

dian group. An agreement has been entered into whereby members of the Canadian group may receive bulletins in which they are interested.

In order to take care of the progressively increasing activities of the CSMA, the staff has been increased by the addition of an administrative assistant. Among the newer activities are the product surveys. During 1958 the following surveys were completed:

Aerosol Production
Insecticide (Household and Industrial)
Drain Cleaners
Antifreeze

More photographs taken at CSMA 45th annual meeting. Leo Lichtenberg, Chicago Sanitary Products Co. and Sol Epstein, Sole Chemical Co. A. E. Budner, S. C. Johnson & Son, Inc., and Gordon Baird, Baird & McGuire, Inc. John E. Andre, A&S Corp., and Paul D. Torpin, McLaughlin Gormley King Co.

Second row: Robert E. Horsey, Givaudan-Delawanna, Inc. and Dr. Ray Treichler, U. S. Air Force. Jack Burke, A. Gross & Co.

and Richard P. Reavey, John H. Breck, Inc. Don Murphy, Gilbert Plastics, Inc. and Charles E. Beach, John C. Stallort & Sons, Inc.

Third row: J. Wickstead, Frank B. Ross Co. and Louis M. Argueso, Sr., L. M. Argueso & Co. Philip Hauser, Root-Lowell Mfg. Co. and Alfred A. Weed, Fairfield Chemical Division, Food Machinery & Chemical Corp. Dr. Bernard Conley, American Medical Assn.; Richard Werkheiser, CSMA and Robert A. Ackerly, CSMA counsel.



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Cooling System Chemicals
Floor Wax (Industrial)

Several surveys are still in the process of being completed:

Industrial Detergent Survey for 1957

Auto Wax and Polish Survey for 1957

Two general meetings were held in 1958. The mid-year meeting at Cincinnati, in May, and the annual meeting in New York City in December. Two group meetings of the board of governors were held. One of these was in Chicago, and one at Oyster Harbors, Oyster Harbor, Mass. Both of these meetings were well attended.

The Precautionary Labeling Committee has been especially active. The growing interest in the labeling of "hazardous substances" is of more than average concern to our membership. The executive office and the CSMA counsel are devoting considerable time and effort to these problems. The need for uniformity of laws and regulations was never so important as in this type of legislation and control. The CSMA committee has vigorously opposed the objectionable features in the American Medical Association Model Bill, at the same time offering suggestions for revision of the AMA bill to conform to the practical aspects of labeling

from the viewpoint of our industries. A model bill was adopted by Chemical Specialties Manufacturers Assn. over a year ago. CSMA will continue its attempt to keep legislation of this type uniform in character and workable from the industry viewpoint. To accomplish this it may be necessary to obtain the assistance of member companies, especially on local problems.

1959 will be a new legislative year of unprecedented impact to our members. 47 State legislatures and the Congress of the United States will be in regular session. The CSMA office is prepared to scrutinize all pertinent
(Turn to Page 168)

Top row, left to right: Paul Hiller, International Minerals & Chemical Corp.; R. B. Mitchell, B. T. Babbitt, Inc., and Donald Price, Robert E. Horsey, Givaudan-Delawanna, Inc., and Carl B. Lien, Lien Chemical Co. Henry Brownstein, Hysan Products Co. and Gordon Bodek, Bobrick Dispensers, Inc.

Second row: William Wallstein, West Chemical Products, Inc. and Joseph Sinsheimer, Fuld Brothers, Inc., Herman Locke, Reefer-Galler, Inc., and Robert C. White, Jr., Robert C. White

Co. Robert E. Felton, Felton Chemical Co. and Robert S. Sweet, Success Wax, Ltd.

Third row: D. J. Orsini, C. B. Dolge Co.; John J. Dora, A. Gross & Co. and Dr. Walter Taylor, Dispergent Co. William D. Ackley, van Ameringen-Haebler, Inc. and William Block, Blockson Chemical Co. Anthony M. Schwartz, Harris Research Laboratories, Inc.; Robert H. Sommer, Mona Industries, Inc., and Morton Schwarcz, Shulton, Inc.



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Soap Assn. Elects

(From Page 48)

cal supplies at better than \$25,-612,000 a year.

Melanie Kahane of Melanie Kahane Associates, New York designers, spoke on "Interior Design" utilizing new and scrubbable materials, which, in turn, affect the size and nature of the detergent market.

F. B. Patton of Armour & Co. was moderator of a two man panel on "Advances in Sanitation Related to Health". Panelists were J. Lloyd Barron, director of sanitation for National Biscuit Co., New York, and Albert J. Burner, supervisor of cleaning standards for the Port of New York Authority. They answered eleven questions pertaining to sanitation.

Mr. Burner defined the aims of the Institute of Sanitation Management as similar to those accomplished by the National Safety Council. The latter has sold safety to top management. I.S.M. hopes to do the same for sanitation by using a professional promotional program as its main educational tool.

Speaking of comparative standards for sanitation costs, Mr. Burner pointed out that dollar costs cannot serve as a criterion of efficiency. The comparison must be based on man hours spent per square foot of different areas, such as office areas, stairways, lavatory areas, etc. Eight representatives of large New York concerns are currently engaged in preparing relative sets of standards, he revealed. In addition, the Levittown, N. Y., school system is conducting a sanitation standards study on its one million square feet of floor space.

New developments in sanitation practice are vital to the soap and detergent industries, Mr. Burner pointed out, citing as examples the trend toward dry or semi-dry cleaning techniques, as against the former scrub and rinse concept, and expanding use of sanitizers. New maintenance problems call for

a novel mechanical approach and for new detergents. The removal of grease which accumulates on the "spots" where airplanes land and load is an example. The unsafe and unsightly puddles of lubricants are removed from airports operated by Port of New York Authority, by treatment with a liquid detergent formulation incorporating a nonionic and an anionic surface active agent, plus an alkali. The Authority spent over \$25,000 last year on this compound alone.

Henry V. Moss, Monsanto Chemical Co., St. Louis, chairman of the Association's Technical Advisory Committee presented his committee's annual report to the membership the afternoon of Jan. 21. "Review of 1958 Research Investigations Related to Detergents in Water and Sewage Treatment" was the fourth report on a research program sponsored by the association. A.A.S.G.P. supported seven outside projects during 1958.

Summarizing his report, Mr. Moss made the following main points:

- 1) Contrary to earlier beliefs, a large portion of the principal organic constituent of synthetic detergents (ABS) is degraded during conventional sewage treatment and means of attaining still higher degrees of degradation in existing or modified sewage treating plants have been uncovered and are being explored further.
- 2) Levels of ABS that exist or may exist in the foreseeable future have no detrimental effect on the efficiency of sewage treatment.
- 3) Alternative procedures for removing ABS from sewage or water supplies by adsorption on particulate matter or by forced frothing have been disclosed and show sufficient promise to warrant continued investigation.
- 4) Frothing in sewage is not due only to ABS but to a combination of factors which in themselves, exclusive of ABS, could be troublesome.
- 5) The polyphosphate components of synthetic detergents are largely decomposed and diluted in their passage through sewage plants, surface streams and ultimately to water treating plants and the fractional parts per million that remain in the raw water feed do not constitute a problem in water purification.
- 6) The phosphate content in surface waters illustrated by those in Illinois consists only partially of inorganic phosphates attributable to detergents. A large portion of the total phosphate comes from land drainage and a lesser amount from organic materials present, likely as biological matter.
- 7) Reliable analytical methods for determination of ABS and phosphates have been developed and recognized as authoritative by qualified people in the areas involved.

Second General Session

Two panels made up the general session held in the morning of Thursday, January 22, and presided over by T. G. Hughes of Oronite Chemical Co. Richard Wearn research director of Colgate-Palmolive Co. was moderator of the first panel: "Product Improvement Based on Ingredients."

George E. Hinds of Continental Oil Co., Ponca City, Okla. opened the session with a report on "New Petrochemical Intermediates for Detergents." A new series of petroleum derived high molecular straight chain primary alcohols and their potentials in the detergent industry were described by Dr. Hinds. These compounds are synthesized by the Ziegler process and are currently available in pilot plant quantities under the trade name "Alfols." Anionic, nonionic, and cationic surface active agents can be made from these novel raw materials. Economically the "Alfols" compare favorably with the corresponding fatty alcohols, according to Dr. Hinds, who added that Continental Oil's commercial scale "Alfol" plant is expected to be ready in 1961.

A picture of an idealized cotton detergent was drawn by R. D. Stayner, Oronite Chemical Co., San Francisco, in a paper entitled: "Design Guide for Better Detergents." The ideal cotton detergent should answer the following description, according to Dr. Stayner:

1. The detergent formulation should contain both a surfactant and a highly efficient sequestrant for hard water cations.
2. The surfactant should have at least a moderate degree of surface activity as manifested by its wetting and emulsifying properties.



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3. The hydrocarbon chain of the surfactant should be as large as possible without sacrificing a moderate degree of wetting and emulsifying activity, and other desirable surface active characteristics.
4. The surfactant should be anionic.

Not all these requirements are fully satisfied by detergents currently on the market, Dr. Stayner believes. Advances in technical information and availability of better raw materials will improve performance properties of detergent products of the future.

"Detergent Builders — Today and Tomorrow" were considered by John R. Van Wazer, Monsanto Chemical Co., St. Louis. He summarized the role of chain phosphates as detergency builders as follows: formation of soluble complexes with metal ions; dispersion, deflocculation, and peptizing of finely divided inorganic solids; electrolyte activity, including salting out and dissolubilization of organic substances in aqueous solution and lowering of the critical micelle concentration; pH buffering; inhibition of nucleation of certain crystals, including calcium carbonate.

Nonfunctional properties of chain phosphates important to the detergent maker are bulk density, dustiness, and sorption of liquid actives. Potassium phosphates are suitable for use in liquid detergent formulations owing to their high solubility.

The use of various silicates as anti-corrosion agents, source of alkali and highly alkaline buffering agents was outlined by Dr. Van Wazer, who also described the role of anti-redeposition agents in modern detergent formulations.

Both bleaches and brighteners are highly beneficial to household laundering results, but they present a compatibility problem, Robert E. Ferris of Purex Corp., South Gate, Calif., said in a talk entitled "Bleaches and Brighteners." Many brighteners are not stable to chlorine bleaches. One way to obviate this handicap is adding bleach to wash water only after the brightener present in the

detergent formulation has had time to become attached to the cloth. Best results, however, are obtained with a completely stable brightener either formulated into the chlorine bleach or into the detergent. The full benefit of bleach, detergent, and brightener is then realized. A need exists, Dr. Ferris said, for more and better brightening compounds which work effectively on a larger variety of fabrics and which are completely compatible with chlorine bleaches.

The last contribution to this panel was "The Application of Bacteriostats in Detergents," by R. E. Vicklund, Sindar Corp. This paper will be published in full in the March 1959 issue of *Soap and Chemical Specialties*.

Packaging Panel

The second panel of the general session held the morning of Jan. 22, was titled "Product Improvement Based on Packaging." James M. Cullinan, Reynolds Metals Co., Louisville, Ky., discussed "Present and Future Aluminum Packaging Applications." Noting the tremendous selling force that packaging has, he showed the ways in which aluminum foil meets the requirements of better packaging by stopping the shopper, preserving the product, and offering convenience and ease of handling. Aluminum packaging, he stated, has doubled in volume from 1952 to 1956 and is expected to redouble itself by 1962, as compared with 1956.

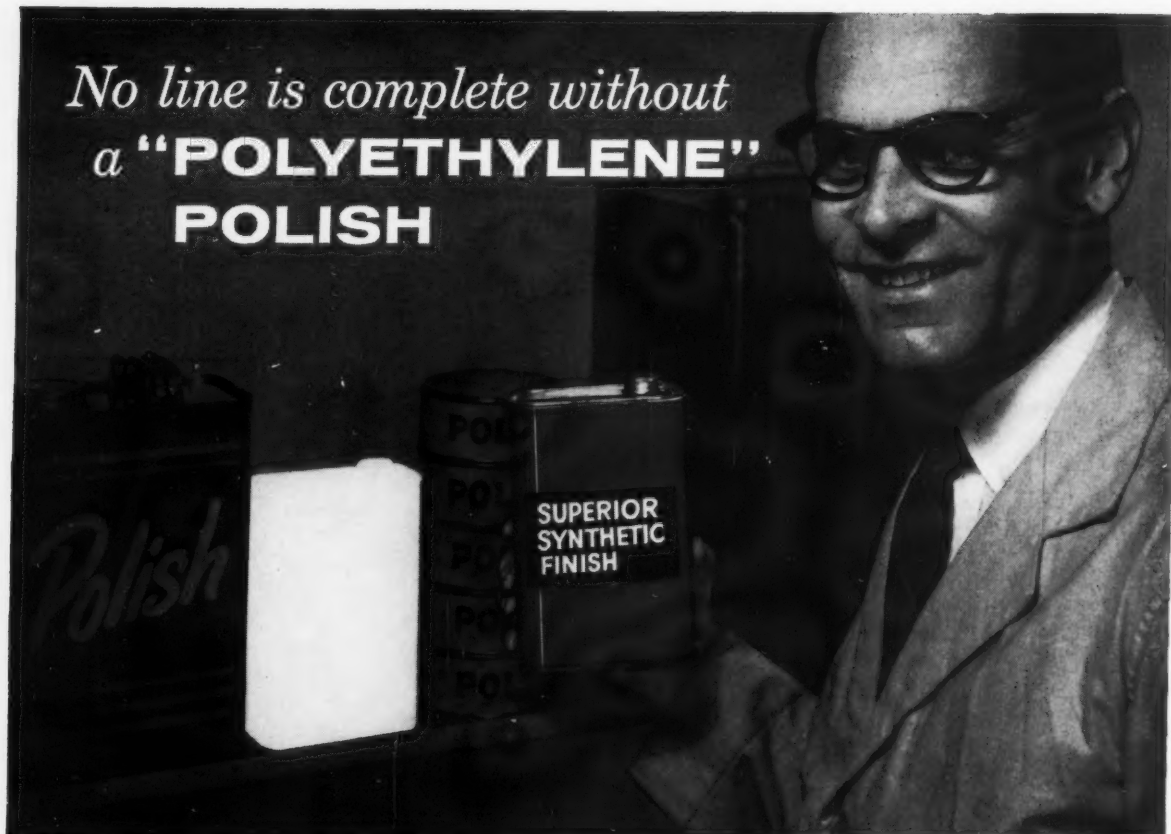
Another packaging material—plastic—was reviewed by A. J. Dragonette, Union Carbide Plastics Co., New York, in his presentation of "Plastics—Tools for Imaginative Packaging." Mr. Dragonette noted that plastics are no longer "luxury" packaging materials but are used in billions of packages. He pointed out that they provide a broad range of physical and chemical properties and lend themselves to a variety of fabrication methods. Used alone or in combination with other materials, plastics are being

readily accepted as a packaging material because of their performance, according to Mr. Dragonette. Illustrating his talk with a series of slides, he showed how this performance is demonstrated in various packaging applications.

B. J. McKernan, Continental Can Co., Chicago, discussed the characteristics of metal containers and how they satisfy the requirements of modern packaging in his talk, entitled "Technical Progress in Metal Containers." Observing the durability of metal containers and their use in either vacuum or pressure packaging, Mr. McKernan reviewed current and possible future developments of interest to the metal can packer. One of these is the increased use of aluminum as a metal for rigid containers. Improved manufacturing methods, including descriptions of new machines currently in use, and a new research technique were also discussed by Mr. McKernan. In conclusion he noted that metal containers offer many unique features, assure high quality and reasonable cost because of constant improvement of materials and manufacturing methods. They are available in a wide range of materials, structural designs, and attractive lithography, he pointed out.

Packaging from the industrial designer's point of view was discussed by Walter Landor, president, Walter Landor Associates, San Francisco, in "Designing the 'Sales Emotional' Package." Commenting that a package design must satisfy more than the generally accepted basic needs of protection, attractiveness, and projection of brand and product name, Mr. Landor outlined other tasks that the package must perform. Among these, the package must overcome the consumer's fear of being manipulated by the manufacturer's selling effort; his "see-sickness" from the blatant design and jarring color of most package designs; his resentment of over-packaging; and his frustration, both real and anticipated, in opening and closing

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Glycerine Outlook

Glycerine sales are currently at a level equaling or exceeding that of last year, E. Scott Pattison, manager of the Glycerine Division of AASGP, reported. J. A. Sloan, division chairman and manager of glycerine sales for Colgate-Palmolive Co., New York, presided at the session.

The current level of sales, Mr. Pattison noted, marks a rise from the 17 per cent decrease evidenced in the middle of 1958 when it was compared with the same period in 1957. He predicted that final domestic disposition of glycerine for 1958 would be about 220 million pounds compared with 243 million the previous year. Stocks have declined substantially during 1958 but were reported as still adequate for all consumer requirements. This decline, from about 80 to about 60 million pounds, seems traceable to exports, principally natural glycerine, and conservative production policies in existing capacity, he stated. Open market sources of crude glycerine continue to decline as soap production in the United States and Europe decreases due to the extension of the market for synthetic detergents.

Mr. Pattison also predicted the possibility of a net export balance of crude glycerine by a million pounds or more in 1958 compared with an import balance of 17 million pounds in 1957. In reviewing markets for glycerine in 1958 he noted that uses of glycerine for its humectant and plasticizing properties in toilet goods, cellophane, and cigarette tobacco have continued to keep pace with the advancing output of these products. The stable markets of mono- and di-glyceride emulsifiers and other food additives have served to offset the decline in the industrial explosives markets. The demand for glycerine for use in alkyd resins will continue to be dependent

upon the technological race for improved paint vehicles as well as the general business curve.

As a forecast for 1959, Mr. Pattison stated that alkyd resins in new modifications and combinations will have found ways to hold their substantial place in industrial finishes. Producers of glycerine, he observed, are basing their plans on the expectation of technical advances within the alkyd field that will disprove predictions of their obsolescence.

The new Glycerine Division steering committee elected at the Jan. 22 session is composed of:

Chairman, W. W. Bray, Procter & Gamble Co.; vice-chairman, E. H. Farnham, Dow Chemical Co.; C. H. Bronson, Lever Brothers Co.; K. R. Fitzsimmons, Shell Chemical Corp.; J. A. Sloan, Colgate-Palmolive Co.; C. F. Williams, Vopcolene Division, Emery Industries, Inc., and W. G. Zaruba, Armour & Co.

Anionics in Toiletries

(From Page 56)

Nevertheless, none of these omitted factors will change the fact that the alkyl sulfates are the backbone of the shampoo industry (9). As these anionics strove for and won dominance in the shampoo field, and as they strive to maintain it, the shampoo formulator has been faced with frustrating but intriguing problems in the scientific evaluation of shampoo properties, and the correlation of technical evaluation with consumer acceptance. Undoubtedly, many of us once naively assumed that detergent efficiency was most important to consumer acceptance of a shampoo, and, certainly, it was an obvious factor for technical testing. Experience has shown us how complex are the problems of technical evaluation, consumer acceptance, and their interrelation. Dr. Powers' restraint in saying "a successful shampoo may be defined as a product having some cleansing and foaming action which leaves the hair soft, lustrous, and manageable" (9) is greatly appreciated by

cosmetic chemists with experience in this field.

The techniques of laboratory evaluation that have been reported in the literature are now too numerous to review in any detail or with any degree of critical comparison. Some of the papers that have reported techniques for evaluating shampoos by methods related to their use on hair are the following:

Foam and Foam Stability

Middleton (14): latherometer; butanol as load.

Fredell and Read (27): "titration" of standard-soiled heads of hair with shampoo to persistent foam end point.

Barnett and Powers (28): latherometer; artificial sebum, sweat and various lipids as load.

Detergency and Cleansing Action

Barnett and Powers (29, 30): Removal of petroleum ether-soluble from wool yarn spun in the grease.

Ester, Henkin, and Longfellow (31): Removal of chloroform soluble from hair clippings.

Conditioning Action On Hair

Henkin, Mills, and Ester (32): Electrostatic charge on hair.

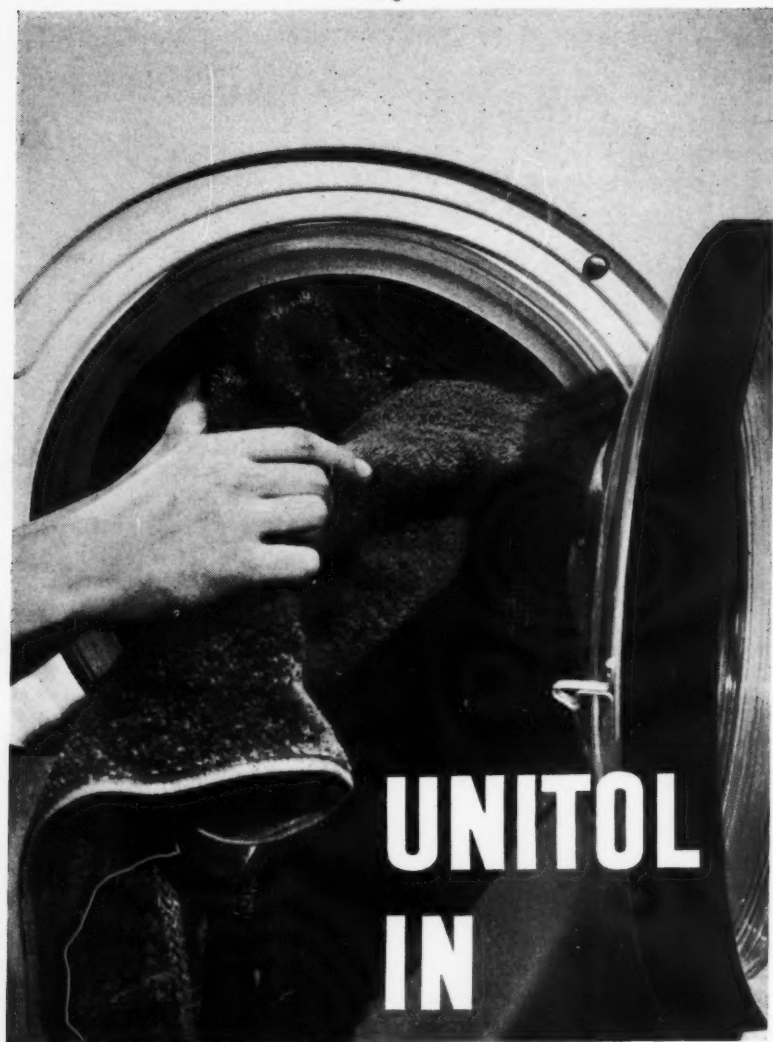
Luster

Mills and Thompson (34): Photoelectric measurement of luster of hair after shampooing.

Fredell and Read (27): Visual observation of deposits on hair tresses after shampooing and air drying.

In addition to the techniques listed above of specialized methods adapted to evaluating shampoos on hair or closely related substrates, the evaluation of shampoos also includes factors whose technical measurement is not greatly different from their estimation in evaluation of other surfactant products:

Surface and interfacial tension
Wetting action
pH
Soap and syndet analysis
Free fat and ash analysis
Viscosity (rheological properties)



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Selling price and cost per application are, of course, also important to the formulator in his evaluation of a shampoo, and, indeed, are an important factor in *Consumer Reports'* ratings of shampoos (33).

Among all the factors important to shampoo performance that can be evaluated technically, we cannot list a factor that is universally regarded as of paramount importance in a shampoo's success: and that is fragrance. The fragrance of a shampoo in the package, as it is used, and the fragrance clinging to the hair after its use probably is among the three most important attributes in a shampoo's success: foam, fragrance, and finish (35).

The correlation of the technical evaluation of a shampoo with consumer acceptance is fraught with difficulties. Some degree of detergency is certainly required, but great effectiveness here probably does not contribute much to consumer's regard for the product. Good foam is now a *sine qua non* for shampoo acceptance. The finish or manageability properties such as ease of hair combing, electrostatic charge on hair, limpness of the hair, and the like can perhaps be measured with some degree of reproducibility and accuracy, but there is undoubtedly great individual variation in each consumer's preferences for hair condition, since her hair type and her coiffure choice will determine what hair condition is best suited to her. When, to these problems, are added the factors of the consumer's reaction to packaging, to advertising, to the "product image," to the "corporate image" . . . and on down the list . . . the cosmetic chemist may indeed be sympathized with in his attempt to erect a firm technical foundation for a successful shampoo.

Consideration of the techniques of formulating shampoos

having definite physical properties and forms returns us to somewhat firmer ground. It is usual, and convenient, to divide shampoos into three major classes: clear liquids, lotions (opaque liquids), and creams ("pastes"). Pacifico and Elder (26) reported they found the active agent content of a typical clear shampoo to be 23 per cent, of a lotion, 18 per cent, and a cream, 25 per cent. These values are well within the range of published formulas, but the latter show very wide ranges indeed. A very quick comparison of the composition of three types may be made on the basis of rudimentary formulas published some years ago (36), in which commercial lauryl sulfates are used in each case:

Clear Liquid	per cent
Triethanolamine lauryl sulfate commercial solution	35
Sodium alginate	2.5
Water	62.5

Lotion	per cent
Sodium lauryl sulfate, commercial solution	30
Magnesium stearate	1
Polyvinyl acetate (10% solution)	20.5
Methyl Cellulose	9
Water	38
Lanolin	0.5
Glyceryl monolaurate	1.0

Crema	per cent
Sodium lauryl sulfate, commercial solution	50
Sodium stearate	8
Water	41
Lanolin	1

None of these formulas represent acceptable finished products, and the authors who presented them 10 years ago did not represent them as such. They do serve as skeletons to illustrate that amine or alkylamine salts are frequently used in clear shampoos, where their somewhat greater solubility contributes to a lower cloud temperature; that the lotion shampoos contain a complex mixture of opacifiers and conditioners whose stability is an important problem in this type of

formula; and that the creme shampoos usually contain an appreciable quantity of soap in combination with a sulfated syndet.

The combinations of ingredients which have been used to solve the problems of shampoo formulation are now so numerous that it is not possible to detail them here. The usefulness of alkylolamides as thickeners, foam stabilizers, and hair conditioners has often been cited (9) and has made them perhaps the most versatile and popular of shampoo additives. Soap as an ingredient of many syndet based shampoos has shown much value. But to go on with this list would require more than a review article; it would require a monograph, and perhaps we can look forward to such a treatise since this field now embraces a great quantity of data begging for analysis and critical appraisal.

We have skimmed through the field of shampoo formulation necessarily emphasizing the two anionics in greatest use. It is literally quite impossible to trace the end-uses and consumption in shampoos of many other anionic syndets which are used in shampoos

either in conjunction with those we have mentioned, or as principle active ingredients. One thinks at once of the N-acyl amino acids, the sulfated polyoxyethylated alkanols, and the several amphoterics which, while as yet relatively minor in volume, are by no means minor in their contributions to many specific shampoo formulas.

(To Be Continued)

Soil Adsorption

(From Page 58)

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(Continued on following Page)

"Klean-Air" room air sanitizer in two fragrances, mint or bouquet, is from Avon Products, Inc., New York. Can design by Avon relates to the particular fragrance of the product. Aerosol container is from American Can Co., New York. Valve Corp. of America, Bridgeport, Conn., supplies the valve and actuator, and the overcap is by Sterling Seal Co., Erie, Pa.



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Hospital Disinfection

(From Page 70)

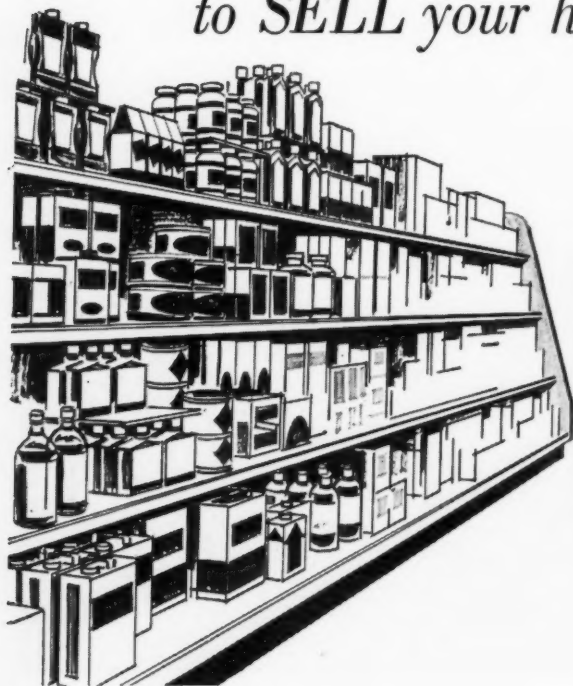
the same microorganisms, when placed under favorable conditions of practical relevance, may be revealed not be dead at all, but to remain capable of proliferation and of causing a generalized infection.

One might point to preparations from organic or inorganic mercurials known to be considerably more bacteriostatic than bactericidal; here, the apparent bacterial "death" as produced by a given mercurial, can often be reversed to "life" following contact with natural tissue fluids such as serum or blood, (also with some chemicals resembling the tissue fluids in certain essentials) (17).

Another significant factor in evaluating hospital disinfectants is the impairing action of so-called "organic matter." Under practical conditions, a disinfectant is hardly ever called upon to kill bacteria in pure culture; actually, such pathogens occur in association with various forms of organic matter, e.g. urine, pus, mucus, etc. Some disinfectants are so indiscriminately reactive with extraneous material of this type that much of their antibacterial potential is dissipated by interaction with it, leaving little if any for the attack upon bacteria whose elimination is sought by disinfection. This observation applies to different classes of disinfectants, but especially to those based upon halogens, such as the hypochlorites, which should be applied logically only to those surfaces or objects whose load of organic matter has been reduced to a substantial degree by prior cleaning.

There is much more that could be said concerning the rather limited character of the informa-

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tion supplied by a disinfectant's phenol coefficient. The few examples given should suffice for illustrative purposes.

(To be Continued)

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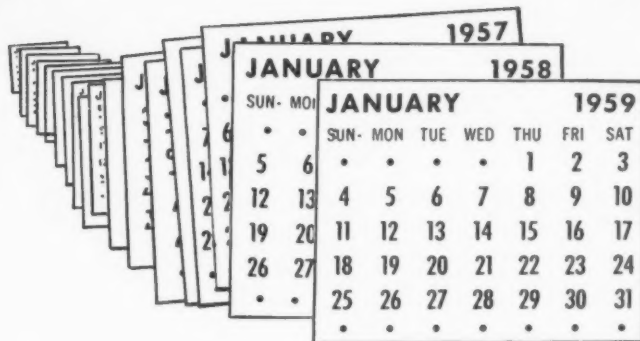
High density polyethylene containers (12 & 22 oz.) are first all-plastic packages used for household detergent. Lever Brothers Co. is test marketing its new "Swan" in these Owens-Illinois "bottles" which feature foil labels. Polystyrene closures are by Gibson Associates, Berkeley Heights, N. J.

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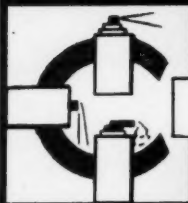
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Packaging NOTES

Wirz Names Two V. P.'s

The appointments of Daniel B. McAfee as vice-president—sales, and Robert Mahan as vice-



Daniel B. McAfee

president—operations for A. H. Wirz, Inc., Chester, Pa., metal tube manufacturers, were announced recently by Robert F. Cox, president.

Most recently with the plastics and resins division of American Cyanamid Co., New York, Mr. McAfee previously had been with

Sheffield Farms Dairy, New York. In his new post he is responsible for national sales of metal and plastic tubes and specialties.



Robert Mahan

Mr. Mahan has been with Wirz for about 20 years. Most recently he was vice-president and general manager of the Carrollton, Ky., plant, and prior to that, was head of the quality control department at Chester. Included in his new responsibilities is the direction of production, labor relations.

Foss to Anchor Hocking

George J. Foss has joined Anchor Hocking Glass Corp., Lancaster, O., as director of package engineering and research laboratories, it was announced recently.

Dr. Foss comes to his new



George J. Foss

post from Spencer R. Stuart and Associates, Chicago consulting management firm. His previous associations include White Cap Bond Crown Division of Continental Can Co., where he served as director of research, and Rheem Manufacturing Co., where he was chief metallurgist.

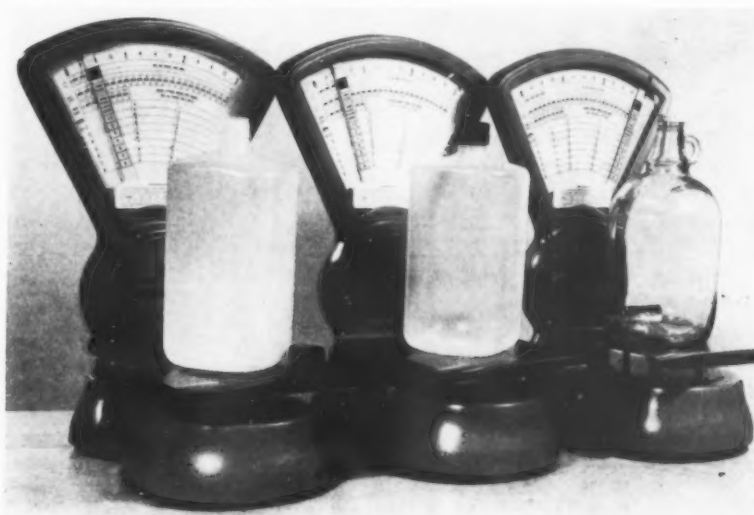
Glass Package Use to Grow

Carl R. Megowan, president of Owens-Illinois Glass Co., Toledo, O., predicted recently that shipments of glass bottles and jars this year will increase by more than five per cent over the 20 billion units shipped in each of the past two years. Projecting this trend, he foresaw glass container shipments exceeding 45 billion units by 1975.

Turning to the packaging industry in general, which he termed a "business phenomenon," Mr. Megowan noted that each major packaging material enjoys an average growth of about 5% yearly.

He cited several reasons for the growth in the use of glass containers, including the plentiful raw materials for glass manufacture, chemical inertness of glass, and the economy and appeal of glass containers.

New square, one-gallon utility bottle in both high density and conventional polyethylene has been added to industrial line of Plax Corp., Hartford, Conn. Savings in weight and space over familiar round glass bottle (right) are claimed for new container by Plax. High density bottle weighs 1/15th as much as glass; conventional polyethylene is 1/7th as heavy as glass gallon bottle. New shape reduces cubage by 37 per cent Plax claims.





Prospective buyers of Colgate's industrial soaps and detergents in corrugated boxes were shown photograph (left) in experimental trial run. Survey of those who bought the pack showed boxes would be well received in general production.

Frank Cavadi, center, industrial engineer, demonstrates ease of handling new corrugated cases with lift truck at Jersey City, N. J., plant of Colgate Palmolive Co. A full 1800 pounds of Colgate products packed in boxes can be stored in same

area formerly required for 1200 pounds or less in bags or drums.

Mr. Cavadi shows how corrugated boxes help save warehouse space. He contrasts 10 of 50-pound drums, which take up equal storage area when either full or empty, with knocked down elements of 10 of the 50-pound boxes when stored before use. The "makings" of these boxes include 10 inner liners and 20 end pads, as well as the outer shells themselves.

Soap Bags* Bow Out at Colgate

Traditional packaging for industrial soaps gives way to corrugated cartons. Customers like new packaging which requires less warehouse space. Cartons can be handled by modern warehouse equipment; spillage cut

A MAJOR soap company has finally "given the sack" to the sack. According to officials of Colgate-Palmolive Co., the cloth sacks traditional for packaging industrial soaps and detergents are on the way out. Unlike women's sack dresses, which recently went through a short-lived popularity in the fashion world, the industrial sack has been a well entrenched favorite in the commercial field. But their use dates back to an era when mechanized warehouse equipment was unknown.

Today the sack is very much a problem in the modern world of warehouse mechanization where it has difficulty getting along with lift trucks and stubbornly resists travel by conveyor belt. Too often the sack bursts, spilling its contents in protest against a changing world. For a while it began to look as though the old granddad of soap

containers would have to give way to the fiber drum, but the drum presents problems of its own that have not been solved and the sack remained king.

And then Colgate instituted a revolution in industrial packaging that deposed the unwieldy cloth bags, replacing them with corrugated board containers that offer tangible advantages to Colgate customers as well as to the company's own operations.

"A big advantage in the new cases is that they offer 50 per cent better use of warehouse footage than cloth bags, and 20 per cent more than storage in fiber drums," says Ray W. Boedecker, technical research adviser for Colgate-Palmolive's Associated Products Department. "Customers and distributors who must maintain heavy inven-

tories especially appreciate the fact that 1800 pounds of Colgate products packed in corrugated boxes can be stored in the same area formerly used to handle up to 1200 pounds in bags or drums."

The switch to cases has meant an 80 per cent cut in damages at Colgate plants while customers report similar savings with the new packaging.

"One of the big problems in transporting and storing any product in bags is the tendency of the cloth to tear," Mr. Boedecker explains, adding that corrugated boxes actually represent a form of insurance against spillage and the contamination and loss of the product from such accidents. "Corrugated boxes are especially able to withstand the kind of rough and tumble treatment that would mean disaster to the usual cloth bag."

And of course a torn bag

*On the West Coast they're "sacks"; most everywhere else the terminology is "bags."

means an extra clean-up job, while corrugated boxes spell out a cleaner warehouse or storage area with fewer janitorial expenses.

"Another big advantage to us in favor of corrugated boxes is the small space they take up in knocked-down form," says Mr. Boedecker. "Stored flat, the makings of 800 of the 50 pound cases take up the same space as only 36 empty 100 pound drums."

Most important of all is the improvement in Colgate quality through the use of the new packaging. Sifting and lumping problems are virtually eliminated since handling and stacking pressures on the containers themselves do not affect the soaps and detergents inside.

Are Colgate products easier to sell in their new industrial dress? Bob Mills, a salesman working the Minnesota and Dakota areas writes: "This type of packaging is the best thing since 'Ajax'. The containers are almost without exception in excellent shape on arrival. The customers like the tear tab and the box in general. For the first time since I've been selling soap, I've been able to carry in a complete presentation and not haggle about price. This package has the appeal

that makes easy the job of convincing even a tough customer that we do have something different."

Other salesmen from all over the U.S. report similar experiences but Mr. Boedecker points out that the new box is not being forced on the customer. Some Colgate industrial soaps and detergents are still available in the traditional bags and drums.

"The main resistance to the changeover lies in the fact that some users, mainly laundries, resell the used sacks and don't wish to give up this extra income. There is a market for used cases as well, however, so even these objections are being overcome," he continues. Colgate has publicized its new container in the moving and storage field where they are re-used for the packing and moving of china and glassware.

Plans for going all-out with corrugated packaging jelled after a 1957 survey by Colgate. It showed that a trial run of experimental corrugated boxes made by Union Bag-Camp Paper Corp. and sold to a broad selection of jobbers and users was well received by up to 80 per cent of the customers. Armed with the encouraging results of the survey, Colgate began

working the new packs into production and six months later 50 per cent of the company's industrial output was in boxes.

If the corrugated box is taking such a strong hold in the field, the reason for its success can best be explained by a quote of three words from the letter of a Chicago salesman who reports on the reception of the new case pack in his area. The salesman writes: "It sells soap."

"We are gaining new customers as the result of these packs," says Mr. Boedecker. "If the corrugated box is taking over, it is because the customers like it."

But conversion to the new packs doesn't end here. Again in cooperation with the Union Bag-Camp Paper Corp., Mr. Boedecker is experimenting with a corrugated box heavily coated with wax at the bottom and lower exterior sides. The box is expected to be used where products may have to be stored on wet or damp flooring.

—★—

Du Pont Colors Drums

E. I. du Pont de Nemours & Co., Wilmington, Del., has converted the color on its 55-gallon drums for hydroxyacetic acid from black to red and white, according to R. D. Scheer, industrial chemicals sales manager of the polychemicals department. Hydroxyacetic acid is used in metal cleaning, electropolishing, and as an ingredient in acid detergents. The conversion was made to establish better product identification and recall value, Mr. Scheer stated.

—★—

Manages Hazel-Atlas Plant

John W. Cooper was appointed manager recently of the Plainfield, Ill., plant of the Hazel-Atlas glass division of Continental Can Co., New York, according to an announcement by L. F. Gayner, division general manager of manufacturing.

Formerly Mr. Cooper was with Owens-Illinois Glass Co. with whom he was associated for 31 years. Most recently he was at that firm's Huntington, W. Va., plant.

Ray W. Boedecker, technical research adviser of Colgate-Palmolive Co.'s associated products department, inspects new experimental corrugated box with wax coated bottom. Developed in cooperation with Union Bag-Camp Paper Chemical Corp., the new box is designed for storage on wet or damp flooring.





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Colgate Palmolive Co., New York, is test marketing its new "Genie" liquid household cleaning and laundry detergent in six western states. Available in pint and quart sizes, the product is packaged in glass containers from Owens-Illinois Glass Co., Toledo, O., with caps supplied by Crown Cork and Seal Co., Philadelphia. The label is printed in metallic red and blue on a white background. Pint sizes retail at 37 cents, quarts at 65 cents.



New germicidal detergent, "CN Plus," now offered in four ounce and 12-ounce quantities by West Chemical Products, Inc., Long Island City, N. Y. Bottled in a glass container by Diamond Glass Co., Royersford, Pa., and Pierce Glass Co., Port Allegheny, Pa., cap is supplied by Armstrong Cork Co., Lancaster, Pa. Labels printed in aqua, dark brown, and white, match cardboard carton, with traditional peaked top, designed and supplied by Container Corp. of America, Chicago.

New "Zing" detergent of Armour and Co., Chicago, is now being marketed by the Jewel Tea Co., Chicago. Package was designed for Jewel by the art department of Ohio Box-board Co., Rittman, O., and features red, yellow, light blue, and dark blue colors. Ohio Boxwood also manufactured the carton of Patent White News board treated with mold inhibitor.

What's New?





"Easy Monday" bleach produced by Blue Magic Co., Wilson, N. C., is now packaged in an amber glass bottle from Armstrong Cork Co., Lancaster, Pa. Large foil label is supplied by Reynolds Metals Co., Richmond, Va., and Armstrong also supplies the metal cap with patented "Acco Bleach" liners. The bottle features easy gripping ridges.

The Chemex Co., Pensacola, Fla., is distributing its "Fluff" rinse for clothes in four southern states. Packaged in a bulb-neck glass container from Owen-Illinois Glass Co., Toledo, O., the product contains a germicide called "K-3." Label is red, white, and blue. "Fluff" is an additive for the last rinse for the entire household wash.



A special promotion by Lanolin Plus, Inc., Chicago, offers the 16 ounce size of "Lanolin Plus Shampoo plus Egg" and "Lanolin Plus Liquid Castile Shampoo" for 99 cents each. Newly developed products are part of the company's effort to broaden its line of hair products and conditioners. The egg formula (right) has a creamy texture and the castile shampoo is a clear, mild soap shampoo. Shipping cartons contain 12 bottles.

National distribution is underway for "Liquid Mystic Foam" (left) rug and upholstery cleaner and "Instant Mystic Foam" all fabric cleaner by Dumas Milner Corp., Jackson, Miss. The "Instant" is said to be the first product of its kind packaged in an aerosol container. Retailing for \$1.19, the 14 ounce container is colored red, white, and blue on a yellow background. "Liquid Mystic" is sold at \$1.19 in a quart can.



Plastic-Kote, Inc., Cleveland, has introduced its 1959 line of aerosol paints featuring containers with a large outer cap matching the color of the paint in the container. The company has set itself a \$1 million sales program for the first three months of this year.

Pharmaceuticals, Inc., and The J. B. Williams Co., New York, are introducing their new formula "Conti" shampoo this month by offering a free hair brush in blue, pink, or ivory to purchasers of the four ounce bottle. The promotion also includes advertising on nation wide television programs.

New "Upholstery Foam Cleaner" in an aerosol package has been introduced by S. C. Johnson & Son, Inc., Racine, Wis. Dispensed directly on the upholstery surface, the product is packaged in a 16 ounce container, said to hold enough to clean all the upholstery in the average car. It retails for \$1.25.



Two new aerosol products from Europe include "Aer-Sana," a room deodorant (left), and "Vitro," a window cleaner. Both containers use valves made by Solfrene, Milan, Italian licensee of Risdon Manufacturing Co., Naugatuck, Conn. "Aer-Sana," produced by L. Manetti-H. Roberts & Co., Florence, Italy, employs a two-phase horizontal spray actuator and valve, and "Vitro" uses a "Micro-Mist" valve and actuator, manufactured by Deisa, Bologna. Both containers are made of aluminum and are filled by Solfrene.

Combination perfume and cologne packages in metered aerosol dispensers are presented in the Schiaparelli and Mary Chess fragrances by Mary Chess Cosmetics, New York. Perfume containers and valves are from Risdon Manufacturing Co., Naugatuck, Conn., with cologne containers by Flaconette, New York. Valve Corp. of America, Bridgeport, Conn., provides the cologne metered valves. Aero-Chem Laboratories in Bridgeport fills both units. About 250 applications are held in the perfume containers and 600 in the cologne dispensers.



Scenery for any model layout, window display, or trimming, is provided by Kerr Chemicals, Inc., Park Ridge, Ill., in its "Kerpro HO" line of hobby sprays. The products are packaged in six ounce containers from Crown Cork and Seal Co., Philadelphia, with caps by Armstrong Cork Co., Lancaster, Pa., and valves by Newman-Green, Inc., Addison, Ill. Kerr fills the product.



New premium for "Dove" detergent toilet bar from the Pepsodent division of Lever Brothers Co., New York, is a hair brush in a choice of four colors free with the purchase of three bars of the product in regular or bath size. A national advertising campaign is backing up the promotion. "Dove" regular retails for 59 cents and the bath size is 74 cents, which are the regular prices of the products.





Fulfilling All Your Filling Needs



WHETHER your product requires liquid filling by gravity... or aerosol filling (with hydrocarbons, halocarbons, or nitrogen and other inert gases as propellants)... in can,

glass or plastic containers... we have complete facilities for handling the job, large or small. Let us help you solve your filling problems... write, phone or wire

PETERSON
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 HEGELER LANE • DANVILLE, ILLINOIS





INSECTICIDES

**PACK A LETHAL SALES PUNCH IN
AEROSOL CANS BY CONTINENTAL**

Insecticides are deadlier than ever, and insecticide sales prove it. Responsible for this new selling surge is the aerosol can, more convenient and more efficient. Of the more than 41 million cans sold in 1957, Continental supplied a large part. It was Continental, remember, who developed the low pressure aerosol that started this fabulous market on its way. For your insecticide, you can't do better than a superbly lithographed Continental aerosol. Because of its experience, Continental is able to produce aerosols at a most economical price . . . and give you the widest selection in size and style. Greatly expanded production facilities assure you of fast delivery wherever you're located. Research and engineering services are also available. Call Continental today.



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Pacific Division: Russ Building, San Francisco 4
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**CONTINENTAL MAKES AEROSOLS
FOR EVERY USE . . . IN THE
WIDEST RANGE OF SIZES**



PAINT



HAIR SPRAY



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SHAVING CREAM



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new
Ucon
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propellants

Now available . . . 5 Top-Quality Grades
Expert Service • Fast Delivery • Formulation Assistance

NEW FORMULATION SERVICE . . . most up-to-date of its kind in America, to help fillers and marketers develop new aerosols, modernize older ones, profitably!

ALL REPRESENTATIVES TECHNICALLY TRAINED . . . you'll enjoy dealing with men who know aerosol markets, understand production problems.

ON-TIME DELIVERY of the quantity you need, from a nationwide network of distribution points.

YEARS OF EXPERIENCE back the high quality of Ucon Propellants . . . and the technical assistance now available to you.

CARBIDE has long been active in emulsion technology, surface-coating technology, silicones, solvents, and the manufacture and handling of gases . . . all associated with the aerosol industry. Thus, UCON Propellants are a logical extension of CARBIDE's research and development programs.

For more information, write: UCON Propellants, Union Carbide Chemicals Company, 30 East 42nd St., New York 17, N. Y. Call, write or wire us, today! Attention, Dept. C-2.

UCON and UNION CARBIDE are registered trade marks of Union Carbide Corporation.

UNION CARBIDE CHEMICALS COMPANY
Division of Union Carbide Corporation



Ucon Propellants are available in five grades

UCON Propellant 11 Trichloromonofluoromethane
UCON Propellant 12 Dichlorodifluoromethane
UCON Propellant 22 Monochlorodifluoromethane
UCON Propellant 113 Trichlorotrifluoroethane
UCON Propellant 114 Dichlorotetrafluoroethane

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of \$25 must accompany each notice of opposition.

Zephyr — This for detergent for dishwashing and general cleaning purposes. Filed May 1, 1958 by Hagan Chemicals and Controls, Inc., Pittsburgh, Pa. Claims use since Mar. 26, 1958.

Pure-Sure — This for liquid composition for cleaning concrete surfaces. Filed May 14, 1958 by The Pure Oil Co., Chicago. Claims use since Mar. 28, 1958.

Carefree — This for powdered soap for cleaning sweaters, socks, woolens, and like products. Filed July 8, 1958 by Chemtrol Industries, New York. Claims use since June 23, 1958.

Dogette — This for dog freshening, deodorizing, and grooming spray. Filed July 29, 1957 by La Bora, Inc., Chicago. Claims use since July 22, 1957.

Odo-Matic — This for personal deodorant. Filed Mar. 24, 1958 by The Odorono Co., Stamford, Conn. Claims use since Mar. 5, 1958.

Sta-White — This for laundry soaps. Filed Feb. 25, 1957 by Mercantile Market Research, Inc., Chicago. Claims use since Feb. 20, 1957.

Studio Girl — This for shampoos. Filed June 10, 1957 by Virginia K. Taylor, Glendale, Calif. Claims use since Aug. 15, 1953.

Jet Klenz — This for liquid hand cleaner. Filed Oct. 7, 1957 by Jet Klenz Corp., Elizabeth, N. J. Claims use since April 1956.

Tru Magic — This for liquid detergent preparation for cleaning carpets and upholstery. Filed May 5, 1958 by James H. Thompson, doing business as Magic Cleaner Manufacturing Co., Clovis, N. Mex. Claims use since February 1951.

Rally — This for all purpose detergent. Filed May 22, 1958 by James W. Langman, doing business as Horizon Industries, Minneapolis, Minn. Claims use since Mar. 19, 1958.

Revel — This for liquid detergent shampoo. Filed May 28, 1958 by Allen F. Carpenter, doing business as Allen Industries, Fort Lauderdale, Fla. Claims use since May 11, 1958.

4-Sight — This for eye glass cleaner and anti-fogger. Filed May 29, 1958 by Hyrol Chemical Co., Chi-

cago. Claims use since May 27, 1958.

Glitter Glaze — This for polishing materials for automobiles, furniture, kitchen and bathroom fixtures and lacquer, enameled, or varnished surfaces. Filed May 26, 1958 by Glitter Products, Inc., Detroit. Claims use since on or about August 1957.

Raltec — This for floor wax. Filed June 20, 1958 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Nov. 20, 1957.

Lumex — This for floor wax. Filed June 20, 1958 by Wyandotte Chemicals Corp., Wyandotte, Mich. Claims use since Nov. 20, 1957.

Fury — This for insecticide. Filed Apr. 11, 1958 by Minnesota Perlite Corp., Minneapolis. Claims use since Apr. 8, 1958.

Clo-Soft — This for laundry rinse. Filed Mar. 31, 1958 by Quality Chemical Products Co., Forest Park, Ill. Claims use since Dec. 20, 1956.

Mitts — This for waterless hand cleaner. Filed Jan. 7, 1957 by Allied Block Chemical Co., Pittsburgh, Pa. Claims use since Sept. 24, 1954.

Porcena — This for liquid cleaning preparation for use in cleaning porcelain and other surfaces.

Dazzle — This for liquid detergent for household use. Filed Apr. 18, 1958 by J. L. Prescott Co., Passaic, N. J. Claims use since Apr. 7, 1958.

Ridoline — This for detergent. Filed Apr. 14, 1958 by Amchem Products, Inc., Ambler, Pa., by change of name from American Chemical Paint Co., Ambler, Pa. Claims use since Apr. 27, 1931.

Hi-Nap — This for concentrated liquid detergent in capsule form for use on rugs, car and furniture upholstery, and for wool, cotton, and synthetic materials. Filed Apr. 1, 1957 by Fairmark Manufacturing Co., Chicago. Claims use since Mar. 4, 1957.

Delchem — This for industrial and household cleaner and detergent compositions. Filed Oct. 1, 1957 by Pennsalt Chemicals Corp., Philadelphia. Claims use since September, 1949.

Cloud 9 — This for general purpose chemical cleaning preparation for use on upholstery, draperies, carpets, venetian blinds, painted walls, clothing, auto finish, chrome and glass, auto interiors, and other uses. Filed Apr. 22, 1958 by L-J Enterprises, Inc., Boulder, Colo. Claims use since Mar. 19, 1958.

Sebulex — This for therapeutic liquid shampoo. Filed Apr. 25, 1958 by Foster-Milburn Co., Buffalo, N. Y. Claims use since Apr. 15, 1958.

Swurlit — This for cleaner for toilet bowls and traps and automobile radiators. Filed Apr. 28, 1958 by Yadro Chemical Co., Milwaukee. Claims use since Aug. 19, 1954.

Acqua Lina — This for all-purpose household detergent. Filed Apr. 29, 1958 by Acqua Lina Manufacturing Co., Brooklyn, N. Y. Claims use since Mar. 26, 1958.

Equidine — This for detergent germicide in liquid form. Filed June 6, 1958 by West Chemical Products,

Inc., Long Island City, N. Y. Claims use since May 8, 1958.

Ramel — This for medicated soap. Filed June 16, 1958 by Harry Benet, doing business as Ramel Products, Cincinnati. Claims use since on or about Dec. 1, 1950.

Soy-Dome — This for soapless cleaner for cleansing hands, hair, scalp, and skin. Filed June 23, 1958 by Dome Chemicals, Inc., New York. Claims use since October 1957.

Solvit — This for cleaning compound for floors, woodwork, tile, linoleum, refrigerators, and similar household use. Filed June 30, 1958 by Solvit Chemicals Co., Madison, Wis. Claims use since May 15, 1955.

Pline DS — This for cleaner for stainless steel and glass. Filed June 30, 1958 by Yale Chemical Co., Nashville, Tenn. Claims use since June 4, 1958.

Formula 409 — This for detergents for removing grease. Filed July 7, 1958 by Brian Scott Products and Manufacturing Co., Detroit. Claims use since on or about Sept. 30, 1957.

Jiffy — This for liquid cleaner for cleaning typewriter type and metallic or rubber rollers. Filed Sept. 5, 1958 by Walter G. Gies, doing business as Walter G. Gies Co., Crownsville, Md. Claims use since May 1926.

— ★ —

ASTM Standards Book

The 1958 *Book of ASTM Standards* will appear in 10 separate parts, it was announced recently by the American Society for Testing Materials, 1916 Race Street, Philadelphia 3. Standards and related information for soaps and other detergents and for wax polishes are included in part 10, 1532 pages, 267 standards, price \$12.00. This volume will be reviewed in a future issue of *Soap and Chemical Specialties*.

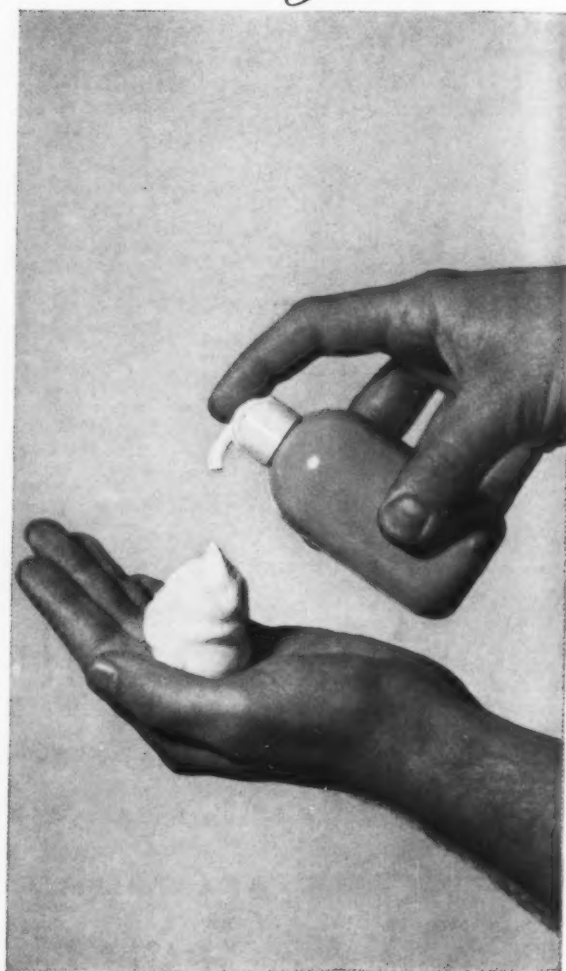
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Continental Builds Plant.

Continental Can Co. of Canada, Ltd., Toronto, is beginning construction of a metal can plant in Chatham, Ontario, this month, it was announced recently by T. C. Fogarty, president of Continental Can Co., New York, the parent firm.

The new one-story plant will be located on a 116 acre site in the outskirts of Chatham and will have trucking and rail facilities. According to Mr. Fogarty, Chatham was selected for the plant site because it is the center of an expanding agricultural area. About 400 to 500 people will be employed at the plant when it is completed.

Announcing new



These plastic-coated glass containers

The wide range of colors are eye-catching on store shelves, attractive in the home.



Owens-Illinois plastic-coated glass packages are the ideal containers for a growing number of products.

Owens-Illinois Pressure Packages




combine convenience and product protection

These new Owens-Illinois plastic-coated glass packages give your pressure-packed products the protection which only *glass* can provide.

These convenience packages are the result of careful research, engineering, and design by Owens-Illinois who is ready to supply tech-

nical help in the packaging of *your* product.

Brilliantly dressed in a wide range of exciting colors and topped with handsome caps, Owens-Illinois plastic-coated glass containers can be decorated with any design to create eye-catching, sales-building packages.

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FOR BEAUTY...
FOR HEALTH!

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VALVE
AEROSOL
DISPENSING**



Cosmetics are the leading sales producers right now and pharmaceuticals will make the next big market... Why?... The big buyer of merchandise will buy the items that are easy to operate, are not messy and require no guess work.

Aerosols are the answer and Precision's great laboratory has developed a stream, metered stream, drop or metered drop for such cosmetic products as hand creams, lotions, hair creams, facial creams, depilatories, and for the new market of pharmaceuticals in aerosols, such as vitamins, antibiotics, dietetic sweeteners, cough medicines, tonics.



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PRESSURE PACKAGING

Pace, Inc., Dedicates New Loading Plant

PACE, Inc., Wilmington, Del., contract filler of aerosols and conventionally packaged chemical specialties, formally opened its new and greatly expanded quarters Jan. 30 with an open house party for approximately 100 guests. Among those attending was the Hon. J. Cabel Boggs, Governor of Delaware.

Hosts for the reception were the following officers of Pace: Ira A. Wolfson, president; Richard Harwick, vice-president and general manager, and Seymour Levey, secretary, treasurer and production manager.

The invocation was given by Rabbi Leonard B. Gerwitz of Wilmington. An address of welcome was made by Mr. Wolfson on behalf of Pace. Mr. Wolfson introduced the Governor, who welcomed the company and guests and extended his wish for Pace's success. A tour of the plant and refreshments followed the formal dedication.

The new 20,000 square foot Pace plant is located on McArthur Road, adjacent to New Castle County Airport in Wilmington. In addition to extensive ware-

housing space, the plant has shipping facilities, an expanded research laboratory, plus one complete pressure filling line. The water bath was designed and built by Pace under Mr. Levey's supervision. Pressure filling equipment was supplied by JG Machine Works, New York, and the labeling equipment by Chisholm-Ryder Co., Hanover, Pa. Pace is also equipped to handle bulk packaging for production runs or sample runs. It is in a position to do package design work, market research, product formulation and assist in merchandising problems.

Pace, founded by Mr. Wolfson, who was formerly with the Freon Products Division of E. I. du Pont de Nemours & Co., Wilmington, was formerly located at 901 Washington St., Wilmington.

Fluid Appoints DeVera

A. T. (Gus) DeVera, Jr., has been named district sales manager for Fluid Chemical Co., Newark, N.J., Aldo S. Pero, vice-president-sales, announced last month. In his new position, Mr. DeVera is responsible for the development of new accounts. Fluid specializes



Combination aerosol can disposal and product reclaiming device just announced by Builders Products, a division of Builders Sheet Metal Works, New York. Unit pierces valve cap and product then flows into pail to be salvaged. Comes in two models: A-H and S.S. Model A-H features steel construction for can disposal (top) with pail of polyethylene plastic. Model S.S. is of stainless steel with 16 quart pail of same metal. Additional piercing head units (top) are available and may be installed for \$15 per assembly. Model A-H retails for \$28.50; Model S.S. is \$56.20.

in contract packaging of aerosols and liquid chemical specialties.

Most recently with American Plastics Corp., New York, Mr. DeVera was also associated with Celluplastic Corp., Newark, N.J.

Fluid Chemical is a contract filler of detergents, hair sprays, toothpastes, perfume, and colognes.

Mojonnier Line for Italy

A combination pressure and cold fill pressure packaging line has just been shipped to Prato, Italy, by Mojonnier Associates Division, Kartridg-Pak Machine Co., Franklin Park, Ill. The aerosol filling line is designed to handle extruded aluminum containers so popular in Europe, as well as conventional cans and glass aerosols.

The Mojonnier unit was ordered by Ditta Ruggero Benelli "Super Iride." Proof that the market for aerosols in Italy is growing, Mojonnier feels, is the fact that it will ship a second pressure and cold fill line to another Italian filler next month.

At the Pace opening in photo at left, l. to r.: James Gottlieb, JG Machine Works; A. H. Lawrence, Jr., Freon Products Div., E. I. du Pont de Nemours & Co.; Jack Schlossman, Aerosol Research Co.; M. J. Coppola, Freon Products; C. Earle Kimble, Freon Products. In photo at right: Rabbi Leonard Gerwitz, Seymour Levey and Ira Wolfson, Pace; Gov. Boggs and Richard Harwick, Pace.



1. COMBINES THE DESIGN ADVANTAGES OF THE RISDON VALVE WITH THE FIRST AND FOREMOST MECHANICAL ATOMIZING ACTUATOR.
2. WIDE RANGE OF APPLICATION
Gives excellent performance on all 3-phase products including water-base formulations • Dispenses propellant emulsions or dispersions • Gives Super-spray performance on conventional 2-phase and ultra-low pressure products • Applied to Glass, Metal and Plastic Containers.
3. WIDER CONE, FINER, DRIER SPRAY CLOUD
Softer, more evenly diffused spray eliminates splattering.
4. LONGER LASTING CONTENTS
Especially advantageous in expensive products such as medicinals and perfumes.
5. SPRAY CONE CLEARS CONTAINER
Eliminates messy accumulation on top of can containers.
6. IMPROVES PRODUCTS BY MINIMIZING DILUTION EFFECTS
Using MICRO-MIST valve on two-phase products gives dual-action atomization which permits reduction in percentage of propellant.
7. GREATER FORMULATION LATITUDE AND ECONOMY
MICRO-MIST'S propellant-saving, double diffusion effect facilitates greater formula variations in quantity and types of propellant.
8. IMPROVED, ULTRA-LOW PRESSURE APPLICATIONS
Gives higher quality spray performance over wider range of temperature and pressure.

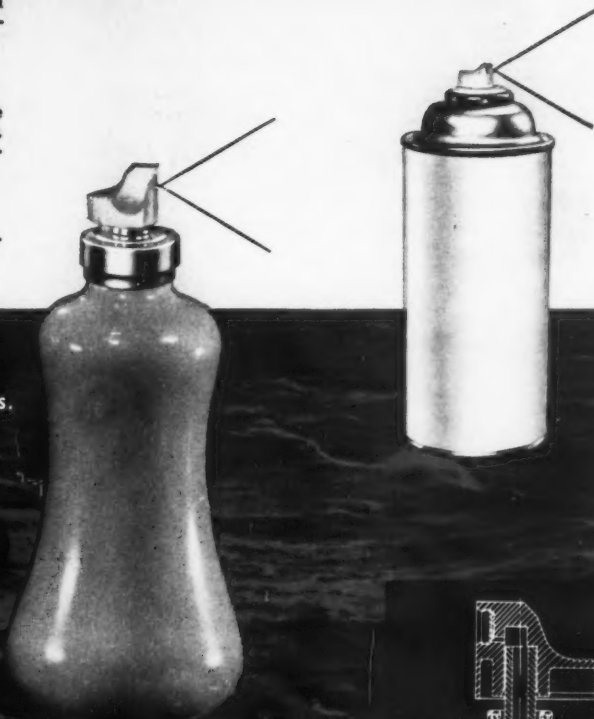
8 Reasons Why RISDON MICRO-MIST* VALVES

Dispense An Ocean Of
Successful Aerosols

Write for free RISDON Valve Booklets.

RISDON

THE RISDON MANUFACTURING CO.
Valve Division, Naugatuck, Conn.



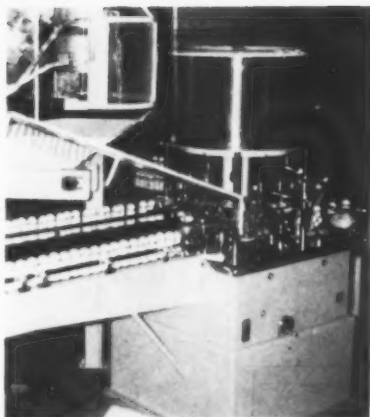
Lorehn Heads Texas Firm

E. L. Lorehn has been named president of Texas Aerosols, Inc., Houston, said to be the first contract aerosol fillers in the southwest area. He succeeds T. H. Coulter who resigned to join Dumas Milner Corp., Jackson, Miss.

Founded about a year ago, Texas Aerosols is constructing a new building which will provide about three times the space now occupied. At present the firm has laboratory facilities for formulation research and custom filling services.

Aerosol Valve Inserter

A new machine, the "R1-1200 Aerosol Valve Inserter", which inserts aerosol valve assemblies into cans at speeds of up to 150 per minute, was recently introduced by PMC Industries, Inc., Hackensack, N. J. A continuous rotary motion, 12-station unit, the machine automatically sorts valve assemblies from a bulk supply. A guide mechanism assures



New PMC aerosol valve inserter

control of dip tubes of any length. Changeover parts allow for handling a full range of can sizes.

Accessories for the inserter include an attachment which automatically orients the dip tube with printing on the can, an automatic pre-assembly unit, and an automatic capper.

Complete information is available from PMC Industries, 293 Hudson St., Hackensack, N. J.

Aerosol Federation

A federation of existing national aerosol trade associations will be formed in Europe, it was announced recently. This move was suggested by the French national aerosol committee. Zurich, Switzerland, will be the seat of the federation's general secretariat. The current secretary of the I.A.A. (International Aerosol Association) will function also as the secretary of the federation. In countries where national associations exist, I.A.A. members will be urged to resign and join the national groups, which will automatically become members of the federation.

I.A.A. members in countries where no national groups exist will continue with I.A.A. which in turn will join the federation.

The newly formed federation's board of directors will be composed of the heads of the national associations and the head of I.A.A.

New book on Aerosols . . .

"PRESSURIZED PACKAGING" (AEROSOLS)

By A. HERZKA AND J. PICKTHALL

19 Chapters . . . 411 Pages

Cloth bound, \$12.00 postpaid in the U.S.A.
\$12.50 elsewhere.

Check must accompany order. Add 3% if in N. Y. City.

Contains chapters covering propellants, filling techniques, laboratory testing, dispenser components, and 13 chapters on formulation of cosmetics, perfumes, foods, hair preparations, foam preparations, insecticides, space deodorants, medicinal preparations, paints, varnishes and removers, fire extinguishers, and a general formulary of aerosol products. Profusely illustrated, Index of aerosol trade names and glossary of terms. Compiled by two outstanding British authorities. The first complete work on aerosols yet to be published.

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Please ship postpaid to the following:

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Fornero Joins Continental

George M. Fornero has been appointed regional sales representative for Continental Filling Corp.,



George M. Fornero

Danville, Ill., it was announced last month by S. J. Campbell, sales manager.

Mr. Fornero was formerly sales service manager for the Betz division of Bohn Aluminum &

Brass Corp., Detroit. In his new post Mr. Fornero represents Continental in the following 11 states: Illinois, Indiana, Wisconsin, Iowa, Nebraska, Minnesota, Ohio, Pennsylvania, Tennessee, Missouri and Kentucky.

Air Reduction Brochure

A six-page brochure titled "New Opportunities for More Profitable Packaging" has been published by Air Reduction Co., Madison, Wis., through its Ohio Chemical Division. The booklet explains and illustrates how the company works to solve packaging and processing problems involving the use of compressed gases. Included is a picture story of Airco's customer service packaging laboratory.

Copies are available from the Air Reduction customer service packaging laboratory, 1400 E. Washington Ave., Madison 10, Wisconsin.

On Thomasson Board

David R. Bagenstose, vice-president and general manager of Thomasson of Pa., Inc., Norris-



David R. Bagenstose

town contract loaders of pressure packages, has been elected to the company's board of directors. Mr. Bagenstose has been with Thomasson since 1957.

The company develops and manufactures products for aerosol packaging including insecticides, shaving cream, cosmetics, and colognes.

Thomasson claims to be one of the largest aerosol packagers in the world.

Gilbert in New Plant

Gilbert Plastics, Inc., completed a move Feb. 1 to a new building built to its own design in Kenilworth, N.J., it was announced recently by Sidney Ostrowitz, president.

Located on Boright Ave. in Ken-Acres industrial park, the new Gilbert building is a one-story structure with 33,000 square feet of factory and office space. The company had been in Hillside, N.J., for the past ten years.

Founded in Gilbertville, Mass., nearly 20 years ago, Gilbert is a major producer of stacking and non-stacking caps for aerosol packages.

Most of the equipment in the new plant is new and represents the latest in production techniques, according to Mr. Ostrowitz.

BUILDER'S PRODUCTS.....

AEROSOL
CAN DISPOSAL
and

PRODUCT
RECLAIMING
DEVICE

Prevent accidents
due to incinerator
Explosions

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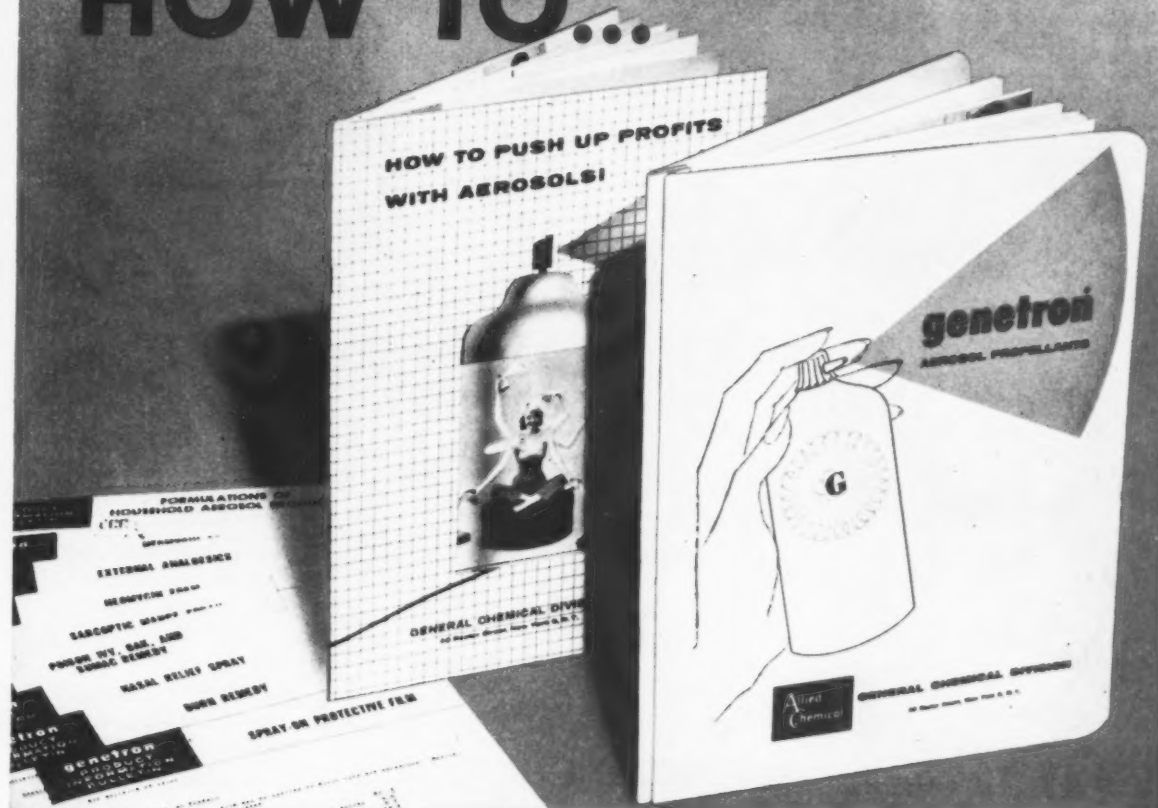
BUILDERS PRODUCTS



Fits all size Aerosol Cans to be disposed of or for reclaiming products, by piercing the valve cap or bottom. The product then flows into a pail to be salvaged.

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☐ Product Information Bulletins

Describe promising new formulations and familiar tested ones for a variety of products studied or developed in our aerosol laboratory. Ask to be put on our mailing list.

☐ How to Push Up Profits with Aerosols

Contains valuable market and technical data...projections of potential sales in various markets, prepared by General Chemical's Market Survey Department...reliable sources for contract filling...basic information about aerosol packages...how aerosols work...outline of "Genetron" aerosol propellants.

☐ GENETRON Aerosol Propellants

A technical manual which includes extensive data on the

physical properties of "Genetron" propellants and mixes, General Chemical technical service, commercial filling methods, list of dependable contract fillers, and other topics of interest to the aerosol manufacturer.

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AEROSOL PROPELLANTS

are putting the push in America's finest aerosols. All standard fluorinated hydrocarbon propellants and mixes are available in the full "Genetron" line—also special propellant mixes where unusual properties are required. Complete technical service is available from our aerosol laboratories.

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- ☐ GENETRON Aerosol Propellants

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Title _____

Company _____

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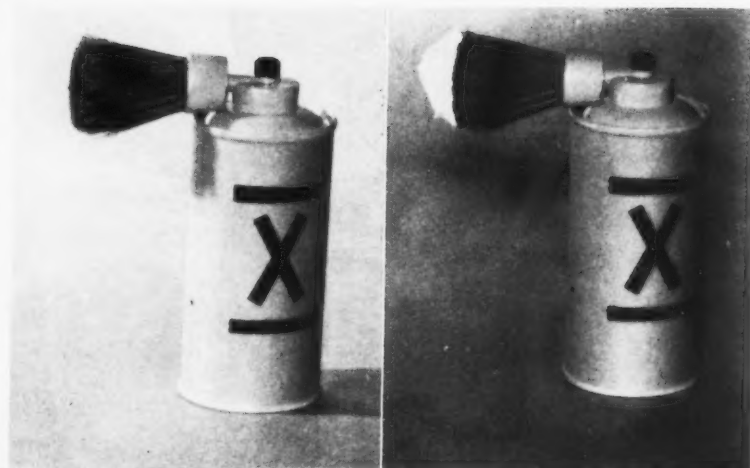
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COLTON -ALPHA AEROSOL EQUIPMENT

Rotary Liquid Product Fillers
Rotary Vacuum Purge Crimpers
Rotary Gassers and Shakers
Rotary Testers
Rotary Pressure Fillers
Roto-Index and Laboratory Units

Your inquiries are invited

ARTHUR COLTON CO.
3425 E. Lafayette
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It's an ideal Combination shave brush and pressure packaged shave cream unit has been developed and patented by Max E. Oser of Birmingham, Ala., to provide self-lathering shave brush. Although not commercially available as yet, Mr. Oser believes his idea has wide-spread applications. He may be reached at 436 Third St., West, Birmingham 4, Ala.

"Isotron" Folders

A price schedule for aerosol packages and a technical folder, both giving information on "Isotron" propellants, have just been issued by Pennsalt Chemical Corp's "Isotron" department, Philadelphia 2.

Specifications, properties vapor pressures and other essential data are given in the four page technical folder on "Isotron" 11, 12, 22, 113, and 114. The six-page price list includes propellants in all standard containers, from 10 pound cylinders to tank cars.

Allied Chemical said "Merry Christmas" to over 600 editors with this 10 cc Wheaton plastic coated bottle of spray cologne. Red bottle, packed in plastic box with clear top, rested on green urethane foam cushion for which Allied's National Aniline Division supplied dyes and isocyanates. General Chemical Division's "Genetron" propellant dispensed fragrance blend supplied by Givaudan-Delawanna, Inc. Solvay's "A-C" polyethylene went into black plastic valve of Risdon Mfg. Co. Allied's sulfuric and nitric acids polished gold cap.



SOAP and CHEMICAL SPECIALTIES

IMAGINATION • CREATION • REALIZATION

**AEROSOL TECHNIQUES**
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Exclusively private label manufacturer of aerosol cosmetics, pharmaceuticals and chemical specialties.

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MANUFACTURERS AID CO.*Contract Packagers*

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Reduce your packaging cost by letting us package for you. We also warehouse and ship.

Large or Small Runs**HAVE YOUR PRODUCT PACKED IN AEROSOL DISPENSERS BY:***Scranton Aerosol Packaging***NEWEST FACILITIES:**

The most modern in the industry, with consistent quality control. Production: 45,000 units per shift.

NEWEST PROPELLANTS:

Freon, isotron, genetron, ucon, and butane are some of many available. Highest quality guaranteed.

PERFECT DISTRIBUTION POINT:

40,000,000 consumers within 250 mile radius. Focal pt. of Fed. Hwy. Program. 100,000 sq. ft. of storage facilities.

WRITE TODAY FOR FULL PARTICULARS:*Scranton Aerosol Packaging*

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SINCE 1946

FLORIDAS' OLDEST CONTRACT PACKAGER

Your product can be packaged in America's fastest growing market AT NO COST TO YOU. The freight saved usually pays the bill.

COMPLETE FACILITIES FOR MANUFACTURING, PACKAGING, STORING, AND SHIPPING LIQUIDS, POWDERS, CREAMS.*LONG OR SHORT RUNS***AVERIL, INC.**

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Complete AEROSOL SERVICE**Small Runs Solicited**

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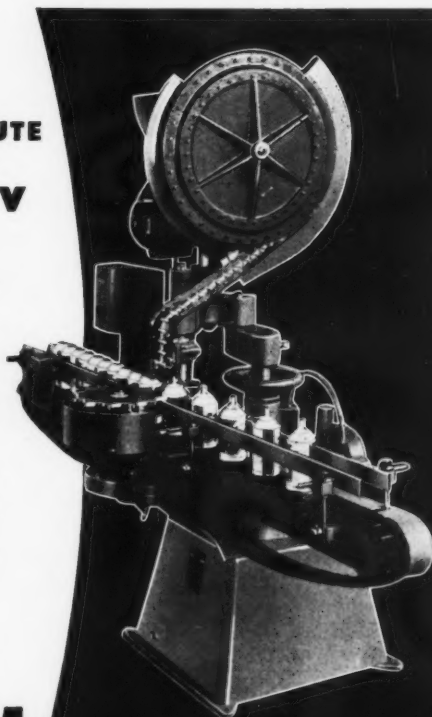
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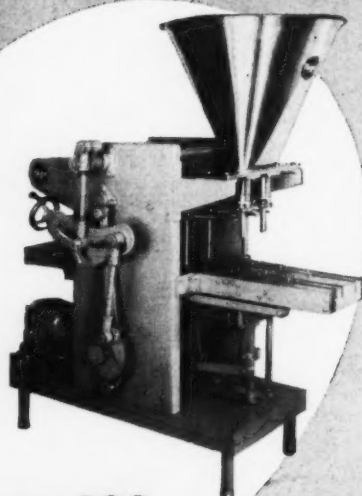
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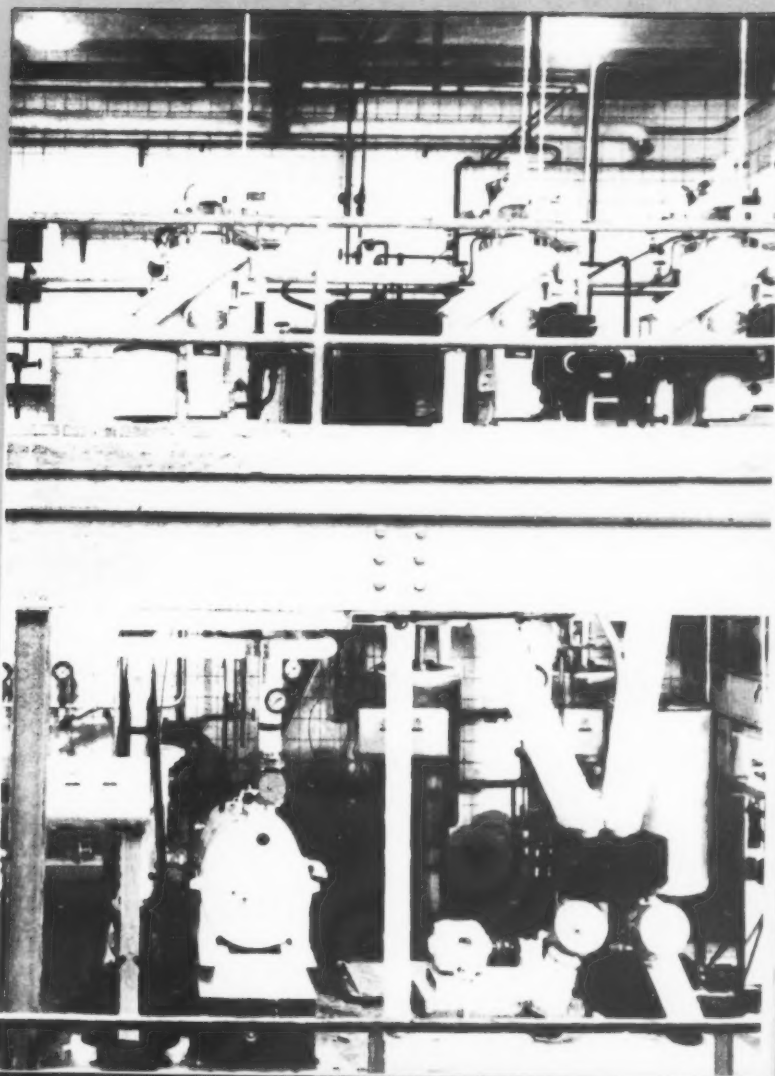
Soap Plant Observer

Products and Processes

New Patents

Bulletins and Equipment

Partial view of a Sharples continuous soap making process installation at the plant of Royal Dobbelman, Ltd., Holland. Sharples and two other continuous soap processes are discussed and compared in the article on page 133.



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SOAP and CHEMICAL SPECIALTIES

Production SECTION

Continuous Soap Processing

A comparison of continuous soap processes made by Monsavon, De Laval and Sharples

THREE continuous soap processes: Monsavon, Sharples and De Laval, are discussed and compared in a special issue of *Revue Francaise des Corps Gras* received in the United States late in December. The three processes were discussed in a paper presented during a one-day meeting held in Marseille, France, last spring at the laboratory of Institut des Corps Gras (Institute of Fats and Oils). The paper is published in French in the *Revue*, which is located at 60, rue de Richelieu, Paris 2.

In addition to continuous soap processing, phase diagrams in soap making and crystalline phases of soap making were discussed during the meeting. A paper on soap cooling was also given.

Continuous Processing

The survey of the three continuous soap processes was presented by J. Bergeron, assistant director of research for Societe Cadum-Palmolive. Two other continuous methods of processing soap, the so-called CTP-Verseifung process of Erich Hoffmann of West Berlin, and that of Mecchaniche Moderne Busto Arsizio, Italy, were mentioned only in passing by M. Bergeron. He said he had no detailed information on the CTP process, which achieves saponification under pressure of 30 atmospheres with subsequent flashing.

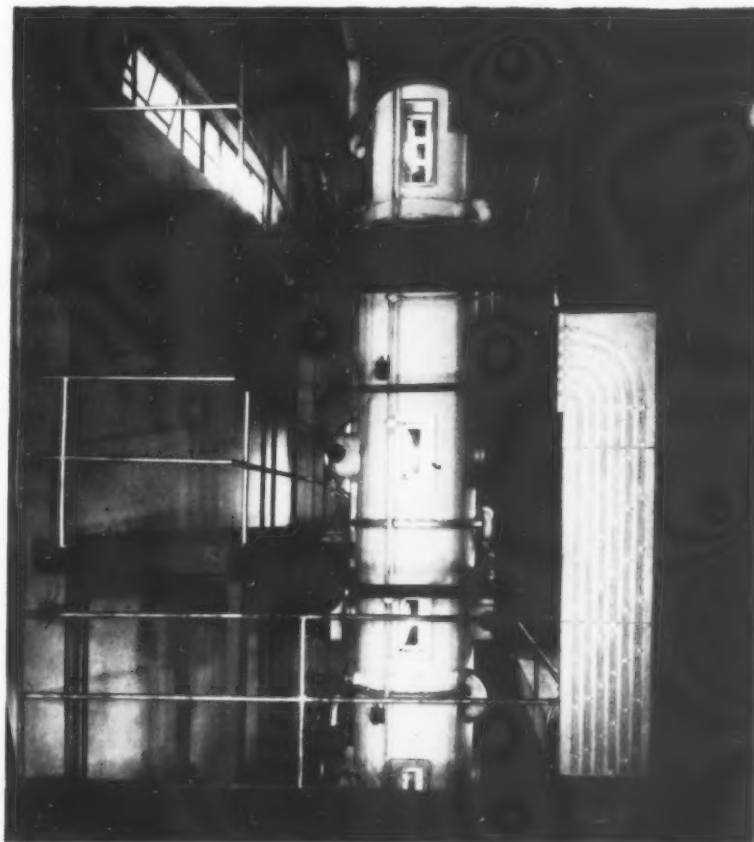
Monsavon Process

Saponification and washing are the two major steps in the Mon-

savon process*. Almost instantaneous saponification is accomplished by heating to 100° C. a previously prepared emulsion of caustic in fat. (Emulsification takes place in a colloid mill.) The soap flows across a column to a tank in which saponification is completed. The tank acts as a buffer reservoir between saponification and washing. Washing is done countercurrently in a tower consisting of six chambers.

A constant temperature in the entire system, essential for its successful operation, is maintained by encasing the installation in a jacket in which water is circulated and thermostatically maintained at 85°C. This arrangement also permits the recovery of the heat of reaction liberated during saponification. Consequently very little outside heat is needed except at the start of operations.

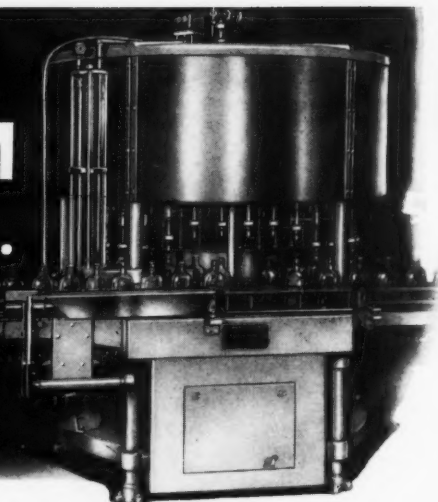
Upper half of Monsavon continuous toilet soap washing tower showing the last three mixing and settling sections topped by the continuous fitting section.



* See article by E. T. Webb in October and November 1958 issues of *Soap & Chemical Specialties*.

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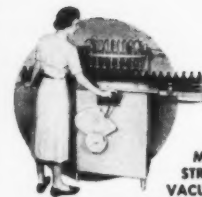
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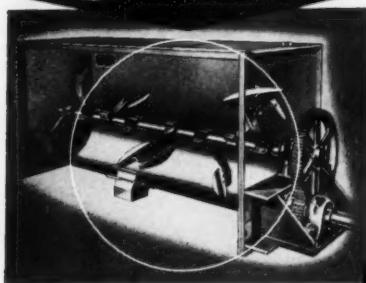
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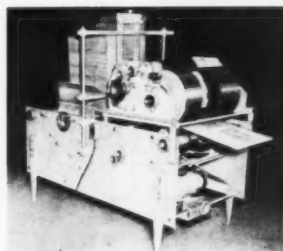
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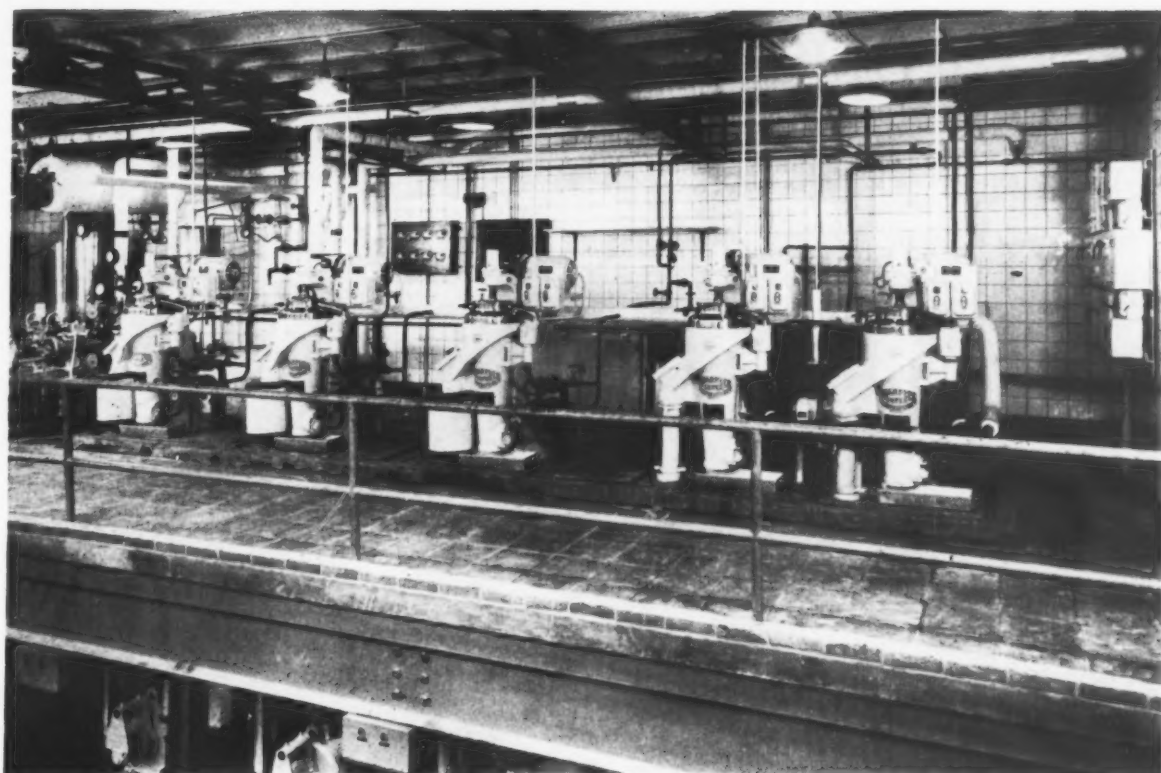
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SOAP and CHEMICAL SPECIALTIES



Another view of the Sharples installation at the Dobbelman plant in Holland. Standard Sharples installations provide two parallel centrifuges for extraction of neat soap.

While the standard Mon-savon washing tower has six compartments this number can be increased for improved glycerine recovery. The amount of lye used for washing is usually adjusted for a yield of 600 kilos of glycerine lye for each ton of soap.

Sharples Method

The classic Sharples unit comprises four steps: neutralization of lyes; completion of saponification; soap washing and glycerine recovery; fitting to neat soap. Each of the four stages consists essentially of a pump fed mixing unit and a supercentrifuge. The tank which feeds the pump contains soap mass originating from the previous processing step and what the Sharples engineers call the "reagent." The "reagent" is composed of the lyes returned from the following processing step to which have been added, if necessary, caustic soda, saline solution, or water. From the agitator—the mixture is conveyed to a supercentrifuge.

The first section is, of course,

charged with oils and fats to which are added the lyes from the second section plus caustic soda. The mixing vessel in the first section is a little larger than those in the remaining sections to permit a slightly longer contact period at a temperature of 100°C. or a little higher since the unit is kept under slight pressure. Saponification in the first stage of the process is not complete and neutral lyes are thus obtained. The saponification reaction is completed in the second step. Settling is usually accomplished on lye and not on nigre. However, the Sharples engineers state, according to M. Bergeron, that it is possible to work the installation with separation of nigre.

Standard Sharples installations provide two parallel centrifuges for the separation of neat soap.

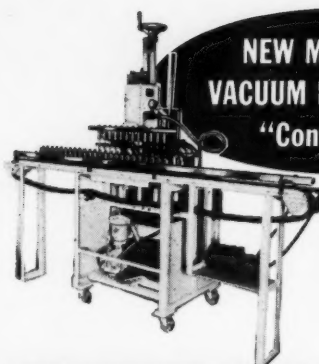
All ingredients are fed by proportioning pumps. Overcharging of the supercentrifuges is prevented by a flow control system operated by compressed air. Insoluble impurities in the soap form

a crust which adheres to the bowls of the centrifuges and must be removed by periodic cleaning.

De Laval Process

The De Laval continuous soap making process, like the Mon-savon process, consists of two stages: saponification and washing. Saponification is effected in three mixing columns made of stainless steel, engineered to obtain intimate blending of the mass. Columns are equipped with heating devices. The first column is charged with soap (formed in the second column) and caustic soda. At the outlet of the first column is a mixing pump through which is added the amount of oil which can be saponified by the excess alkali present in the soap. The mixture then passes to the second column where saponification is nearly completed. From the second column one part of the mass is conveyed to the third where the reaction is completed. The other portion of the soap mass is returned to the first column.

The soap from the third

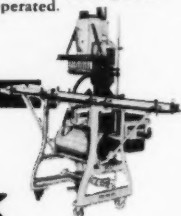


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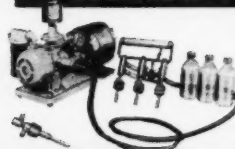
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column is countercurrently washed with brine. Each washing section consists of a column and a pump which circulates continuously the mixture in the column. Soap and lye are added through the suction end of the pump. Part of the mixture is withdrawn at the outlet of the chamber and conveyed continuously to a centrifuge.

Correct proportions of water and soap are conveyed to the last section to create the right conditions for the classic settling out on nigre. Separation takes place in a centrifuge and the nigre is continuously recycled.

All centrifuges used in the De Laval process are hermetically sealed and equipped with valves which control counterpressure to avoid aeration of the finished soap. The De Laval plant incorporates a device for automatic proportioning of caustic soda added for saponification and of brine added at the fitting stage. This device is based on the relationship between soap viscosity and electrolyte content.

Methods Compared

When comparing different soap making methods one must examine the two main difficulties which must be overcome by the soap maker. M. Bergeron points out. These arise at the beginning and at the end of the reaction. In the kettle process saponification is initiated by soap originating from nigre left from a previous batch or soap formed by the action of the fatty acids on the soda at the beginning of the pasting operation. A slow reaction start in the soap kettle means no more than a little extra time is needed for the operation. However, in a continuous process the time element is critical and saponification obviously must be completed in the allotted time. Each system solves this problem in its own fashion. De Laval employs a device similar to that used in the kettle method: recycling soap to start the reaction. The Monsavon process calls for pre-emulsification in a colloid mill. Sharples also sets off the reaction by mechanical

Table I. Characteristics of glycerine lyes obtained by different processes.

Percentages	Monsavon	Sharples	De Laval	Kettle
Total alkali as N_2O	0.77	0.12	0.15 — 0.30	very variable
Glycerol	11	17 to 19	13 in two 18 in four stages	8 — 15
Fatty Acids	0.2 plus oxidized acids			

Table II. Energy consumed in making one ton of soap (63 per cent fatty acid)†

Source of energy	Monsavon	Sharples	De Laval*
Steam	80 kilos	120 kilos	100 kilos
Electricity	18 kwh	32 kwh	25 kwh
Man power	0.5 h	No. 1 1 h No. 2 0.5 h	1 h

* Per ton consumption of power decreases with the size of the unit. These figures apply to a 0.9 ton per hour unit. They drop to 14.5 kwh for a 5.4 ton per hour unit.

Table III. Over-all dimensions.†

Monsavon	Sharples	De Laval
2 tons per hour 5 x 8 x 8 excluding settling tank	No. 2 13 x 8 x 10 No. 6 24 x 6 x 10 No. 1 8 x 5 x 8	Dimensions not known, probably close to the Sharples plant

† All measurements are expressed in metric units.

means through emulsification in a mixing chamber. Type of emulsion varies in the different processes: an oil-in-water emulsion in the batch, De Laval and Sharples methods, and a water-in-oil emulsion in the Monsavon process.

The second problem arises at the end of the soap making process. Obviously the reaction must be completed to avoid the presence of unsaponified matter in the finished soap. In both the Monsavon and the De Laval method a little excess caustic soda permits completion of saponification. In the Sharples process saponification is completed only in the second stage by the presence of excess alkali. This excess alkali is neutralized when returned to the first section as is the soda which is added. In the first section saponification is incomplete and lyes are neutral. The kettle process, enjoying the flexibility of a batch operation, permits either approach.

Glycerine is an important by-product of soap making. However, glycerine lyes must be concen-

trated before they can be sold. To be economical a soap process should yield glycerine lyes of highest possible concentration. This must be accomplished without adding to the glycerine content of the soap. Obviously countercurrent circulation of lyes makes this result more attainable. Values obtained for glycerine lyes by different processing methods are shown in Table I. These are average values. They apply to soap made from 80 per cent tallow and 20 per cent coconut oil and assume that the fatty materials contain 10 per cent glycerol.

No comparative runs using identical fat charges were made by the author. His comparisons of soap quality rest on theoretical considerations. Monsavon claims superior washing based on the composition of the lye. Washing takes place at the soap-lye interface and is bound to achieve better elimination of readily soluble impurities, gums (or organic residues) and the soaps of oxidized fatty acids. Centrifugation processes are certainly

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superior in the elimination of solid impurities.

Recycling of scrap is a problem common to all continuous soap plants. In the Monsavon installation scraps can be introduced in paste form at the bottom of the washing tower. Care must be taken not to disorganize the washing cycle. In a De Laval unit scraps can be added to the soap recycled to the first section. The risk of disturbing the cycle is minor due to the automatic control based on viscosity.

— ★ —

"Lorol" Fatty Alcohols

"Lorol" fatty alcohols, how they are produced, their physical and chemical properties, their purities and commercial specifications, and their industrial applications are described in a new manual just published by the Polychemicals Department, E. I. du Pont de Nemours & Co., Wilmington, Del.

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The 50-page cloth bound book gives information on physical and chemical properties and applications. A bibliography is appended. Design and illustration are exceptionally well done by Jose and Ferruccio Panepinto. Copies at \$1.00 each, are available upon request to R. C. Molden at the Polychemicals Department.

Book Reviews

First Book on Pressure Packaging

ALTHOUGH the United States has pioneered pressure packaging consumer products, the first comprehensive text on this subject comes to us from overseas. "Pressurized Packaging" by A. Herzka and J. Pickthall was published in this country January 5, 1959, by Academic Press, Inc., New York, having appeared in England late last year. Mr. Herzka is with Metal Box Co., London, Mr. Pickthall is with Polak & Schwarz (England) Ltd., Enfield, Middlesex.

The production man will profit from this book as much as the chemist engaged in product development or quality control.

A short introductory section deals with the history of pressure packaging and with the aerosol principle (method of operation). Components of the package and techniques of filling and laboratory evaluation are covered in section B. In Chapter III, on propellants, properties and uses are described of liquefied gas propellants (fluorinated hydrocarbons, paraffin hydrocarbons, and methylene chloride and methyl chloroform) and of compressed gases. Various types of containers, aluminum, glass, tinplate, and plastic, are discussed in the chapter on dispenser components. Containers featuring a metal housing and a plastic liner are commented upon. Speaking of internal lacquering of metal containers the authors say that it "will increase rather than decrease the packaging problem." Conventional, metering, and special purpose valves are discussed as well the components of the valve assemblies. Some advice on labelling is given.

Both cold and pressure filling with liquefied gases and injection filling with compressed gases is described in the chapter on filling techniques. A filling plant layout is shown and equipment des-

cribed and illustrated. Chapter VI on laboratory evaluation starts with a pre-marketing check list, followed by a well illustrated section on apparatus and equipment necessary to carry out the checks listed. Methods are given for evaluation of spray patterns, discharge rate, particle size, pickup efficiency of residual insecticides, flammability, containers, valves, and other factors determining the quality of the ultimate product.

Section C, devoted to formulations, covers the following fields: insecticides, space deodorants, perfumery, emulsified systems, cosmetics, hair preparations, cosmetic foam preparations, medicinal preparations, foods, paints and varnishes, paint removers, fire extinguishers, and a general formulary.

The final section of the book consists of lists of abbreviations, and terms; trade names; British (formulation) patents; and suppliers. A subject index and an author index are appended. Literature references follow each individual chapter.

The book is based on a vast and very international collation of technical material and patent literature, on communications by many firms engaged in various industries related to pressure packaging, and, most important, on the wide experience of both authors who have been associated with "aerosols" since their commercial ascendancy.

Pressurized Packaging, by A. Herzka and J. Pickthall, 411 pages, cloth bound, eight and three quarter by five and one half inches, price \$12.00.

New Michel Data Sheet

A data sheet describing its line of "Cachalot" fatty alcohols is available from M. Michel and Co., Inc., 90 Broad St., New York 4.

The one-page sheet, presented in newspaper form, lists uses for

the products by a variety of industries. Soap and detergent manufacturers, for example, can use "Cachalot" lauryl, myristyl, cetyl, stearyl, oleyl alcohols as anti-caking compounds, clarifiers, stabilizers, and surfactants, the sheet says.

Phillips Hydrocarbons List

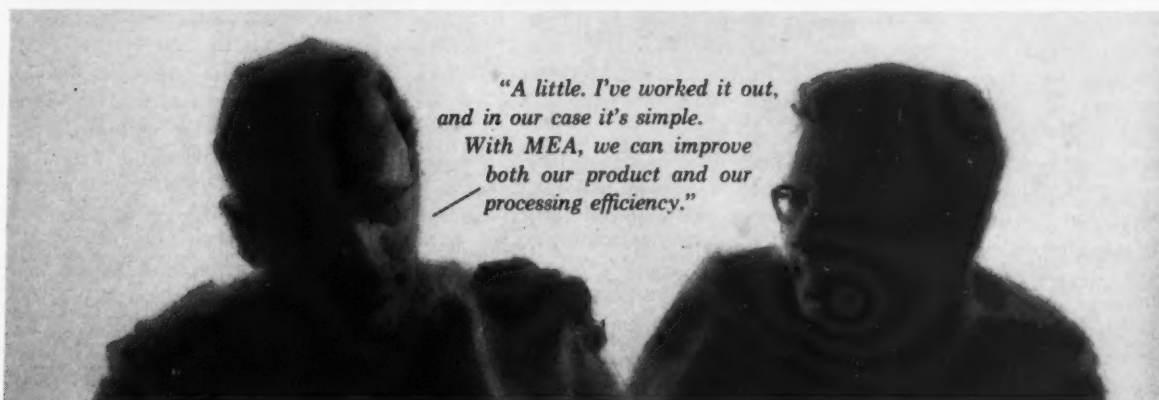
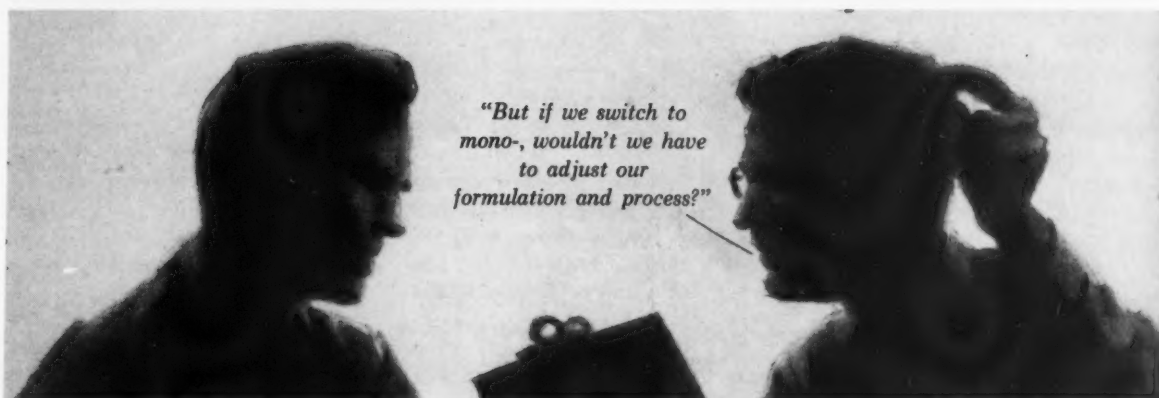
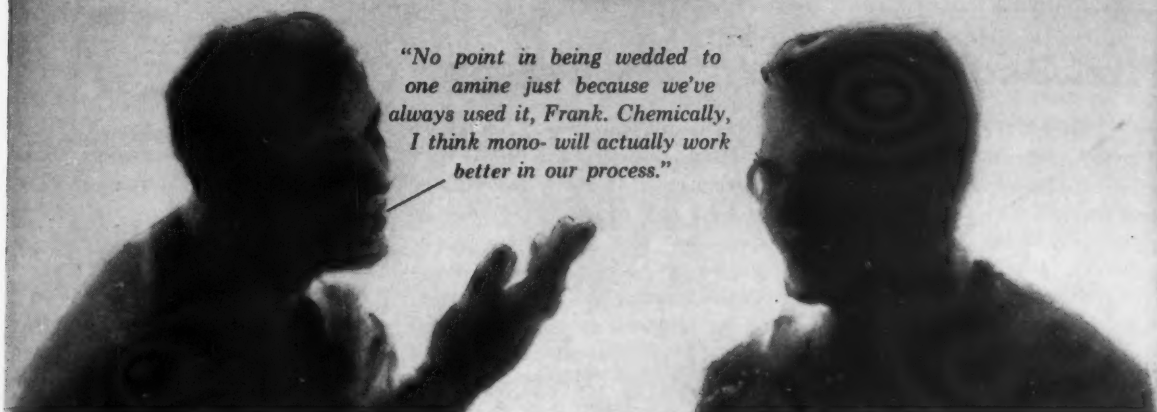
A 138-page catalog of "Phillips 66" hydrocarbons and sulfur chemicals has recently become available from the special products division of Phillips Petroleum Co., Bartlesville, Okla. The book lists and describes the firm's established products, gives pertinent data on their specifications, uses, and containers. In addition it carries an appendix devoted entirely to new products.

New Carbide Formulary

"Emulsions and Detergents", Union Carbide Chemicals Co.'s manual and formulary has just appeared in its tenth edition. The 100-page illustrated booklet starts with fundamental information on surface active agents and emulsification. Formulations cover the wide range of chemical specialties wherein surface active agents play an important part. Detergent formulations, textile and leather coatings, automotive chemicals such as tire cleaners, agricultural chemical formulations including insecticides, cosmetics, and various types of polishes are covered. Information on polishes, detergents, and cosmetics has been enlarged and brought up to date to include new materials, such as "Polyox" water-soluble resins. Applications of silicones in various household, automotive and personal products receive attention.

A list of Carbide's more than 400 synthetic organic chemical products is appended as well as an index. This booklet should prove very helpful to anyone engaged in the production of chemical specialties. Copies of the formulary are available from Union Carbide Chemicals Co. Division of Union Carbide Corp., 30 East 42nd Street, New York 17.

"WHY DON'T WE TRY MONOETHANOLAMINE?"

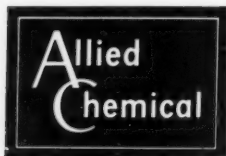


It won't hold for everybody, but in some applications where di- or triethanolamine is being used, there are positive advantages to be gained from switching to mono-. For example, MEA can frequently be used advantageously as the amine in amine soap emulsifiers for such products

as cutting oils, weedicides, waxes and buffing compounds. In some instances total amine required is

reduced to the extent that cost is reduced. In some cases mixtures of MEA and TEA are better than either alone. MEA may improve performance while TEA maintains a lower pH.

If your product or process now utilizes DEA or TEA, it may pay you to evaluate MEA. Allied makes all three, and will give you technical suggestions that may help you shave costs, improve efficiency or make a better product. Write for any technical assistance you need.



NITROGEN DIVISION

Dept. EA 5-27-3, 40 Rector St., New York 6, N.Y.

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine:—MacNair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be \$1.00 per copy.

No. 2,860,151. Method for the Manufacture of Soap, patented by Edward Robert Lamson, Sewell, N.J., and Theodore A. Renshaw, Glenolden, Pa. The patent teaches a method for preparing a soap displaying unusual activity in the formation of gels and greases comprising dissolving an aliphatic carboxylic acid from the group consisting of stearic and 12-hydroxystearic acid, which acid when neutralized yields the desired soap constituent, in a liquid hydrocarbon having a boiling point below the melting point of a soap, said hydrocarbon being one from the group consisting of naphtha, light petroleum distillates, terpenes, and aromatic hydrocarbon; neutralizing said acid with a metal base from the group consisting of the oxides, hydroxides and carbonates of lithium, calcium, sodium, barium and zinc causing precipitation of the soap form in the liquid hydrocarbon; and evaporating the hydrocarbon.

No. 2,861,723. Two Way Resilient Valve for Pressurized Containers, patented by Ralph D. Cooksley, Elizabeth, N. J., assignor by mesne assignments of one half to Pressure Packaging Corp., Union, N.J. The invention covers a pressurized container and dispenser comprising a container body having a hollow projection with an annular seat and a central loading and dispensing hole, a valve element comprising a cylindrical portion extending into the hollow projection, a top sealing portion having its periphery engaging with the annular seat of the projection, a perforated annular flange portion extending radially outwardly from the bottom of the cylindrical portion, said hollow projection having a second annular seat surrounding the hole and parallel to the first mentioned seat and said annular flange portion of the valve element engaging with the second mentioned seat, means for retaining said valve element within the hollow projection and against downward displacement, said valve element being formed of flexible material and adapted to be flexed from its seat in the hollow projection and normally held thereagainst by the pressure of the con-

tents within the container, and means for depressing the top portion of the valve element to discharge the contents.

No. 2,856,103. Spray Valve Having Syphon Tube Metering Chamber, patented by Lawrence T. Ward, Portland, Pa. Revealed is a metering spray valve for self-propellant liquids comprising a tubular cylindrical valve housing having an enlarged diameter metering chamber borehole converging into a restricted borehole aperture adjacent the bottom of the borehole, said housing having screw threaded means for securing a high pressure resistant container and having further an annular integral retaining collar above said screw threaded means and in space relationship to said borehole; a non-metal resilient syphon tube disposed in said housing borehole lining the entire borehole and extending downwardly therefrom; a non tilting integral plunger having a top section having a top borehole therein communicating with a lateral opening at the base of the borehole, an enlarged middle section integral with the bottom of said top plunger section and having a circular flat top wall and a bottom plunger section integral with said middle section and having a valve head at its extremity, said plunger having its bottom section and middle section disposed normally in close spaced relationship within the syphon tube located in the housing borehole; a sealing ring disposed seizingly about said top plunger section and within said annular collar of said housing for effecting a hermetical seal continuously with the plunger top section, said ring also extending within the borehole for effecting an intermittent hermetical seal between the bottom of said sealing ring and the flat top wall of said middle section, and spring means secured about said plunger for urging said plunger continuously outwardly from said housing whereby inward movement of said plunger into said housing first causes said valve head to close the restricted tube portion within said housing and subsequently causes the lateral opening of the plunger top section to pass below said sealing ring to establish communication with the liquid wherein the syphon tube in the housing borehole thereby permitting the liquid contents of the housing borehole to be dispensed into and through the top plunger section.

No. 2,856,105. Spray Valve, patented by Lawrence T. Ward, Portland, Pa. Claimed is a valve dispenser for aerosol containers having a screw threaded aperture in the top wall thereof comprising a tubular housing having a top wall having a small cylindrical top borehole therein, an intermediate cylindrical borehole below said top borehole and communicating therewith, and a bottom cylindrical borehole below said intermediate borehole and communicating therewith; screw threaded means of secur-

ing said housing in said screw threaded aperture of said top wall of said aerosol container in a gas tight manner; a resilient ring having an aperture is disposed in a gas tight manner in said intermediate borehole, the aperture wall being contiguous with the wall of said small borehole; a dip tube having an exterior diameter substantially equal to the diameter of said intermediate borehole disposed through said large borehole and in gas tight relationship in said intermediate borehole and against said ring, said tube having an internal diameter suitably larger than the aperture of said ring forming thereby an inner annular rim of said ring disposed in said intermediate borehole; depending funnel means integral with said housing seizing in a gas tight manner said dip tube, constricting said dip tube and forming thereby a reservoir chamber between said dip tube and the wall of said large borehole, said dip tube having a lateral opening communicating between said chamber and the interior of said dip tube; a reciprocal plunger having a top tubular portion of small diameter communicating with a borehole therein having a lateral aperture in suitable spaced relationship above its base, said top plunger portion being non-tiltingly extending through the top borehole of the housing top wall and in gas tight relationship at all times in the aperture of said resilient ring; said plunger having a solid bottom portion of larger diameter than said top portion forming thereby an annular ridge disposed below said ring and adapted to engage said rim of said ring in a valve seat gas tight manner, said bottom portion having an enlarged bulbous nose adapted to pass said lateral opening in said dip tube in a valve operating manner for permitting filling up and emptying of the reservoir chamber; spring means disposed about the tubular plunger portion and upon the top wall of said housing and a conventional spray valve button having a lateral spray conduit secured to said top plunger portion above said spring communication with the plunger borehole.

No. 2,865,370. Dispensing Adaptor for Disposable Aerosol Units, patented by Daniel H. Gattone, Drexel Hill, Pa., assignor to Birch & Gattone, Inc. Revealed is a dispensing adaptor for use with disposable aerosol units having a hollow valve stem, comprising a hollow body formed with a coupling skirt, a centrally apertured plate mounted in the body above the skirt engageable over the valve stem, valve operating means carried by the body positioned above the end of the valve stem, and a discharge nozzle extending from the said body, said valve operating means being an enlargement formed on a wall of the hollow body and including a combined cam and nebulizer surface.

No. 2,862,648. Flexible Dispensing Head for Pressurized Containers, patented by Ralph D. Cooksley, Morristown and William M. Lester, Mountainside, N. J. The patent covers in a pressurized container, a container assembly having an outwardly-extending nipple portion thereon, said nipple

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BANK ON ORBIS FLAVORS, MONEY-SAVERS

portion having a discharge opening and a seat adjacent the lower end of the discharge opening, a valve element operable in the nipple portion and normally retained against the seat by the pressure of the contents within the container, said nipple portion having a depressed conical outer end face flaring outwardly from the outer end of the discharge opening, a flexible dispensing head tightly fitted upon the nipple portion and having a depressible diaphragm overlying the conical end face, said diaphragm having an integral tubular projection depending into the discharge opening of the nipple portion and through which the contents are discharged, said tubular projection being engageable with the valve element to force the valve element from its seat, upon the dispensing head being depressed, said diaphragm normally lying away from the conical face of the nipple and seated upon the conical end face when depressed to minimize the space thereunder whereby to prevent the contents from collecting under the diaphragm when the container is used and the ultimate loss thereof.

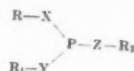
No. 2,858,569. Method of Producing Synthetic Detergent Cakes, patented by Charles F. J. Dupuy, Allendale, N.J. In a method of producing synthetic detergent cakes, the patent claims the steps comprising forming a fluid mixture composed principally of a water-insoluble wax and a normally-solid synthetic detergent, flowing said mixture into a mold having collapsible sides and a plurality of flexible pallets in the bottom thereof, solidifying said mixture within said mold, then collapsing the sides of said mold, cutting the molded body into separate sections along the junction lines between said flexible pallets, separating said sections on said pallets, and thereafter inverting said solidified sections with said pallets attached thereto and stripping said pallets free from said solidified sections.

No. 2,860,107. Controlled Sudsing Heavy Duty Liquid Detergent, patented by Vincent Lamberti, Hackensack, and Arthur O. Gray, Jr., River Edge, N.J., assignors to Lever Brothers Co., New York. Disclosed is a controlled sudsing heavy duty liquid detergent composition which has phase stability on storage and suds stability in usage consisting essentially of an aqueous suspension of from about 2% to about 3% of potassium dodecylbenzene sulfonate, from about 3.5% to about 5% of sodium tallow methyl taurate, from about 2% to about 3% of an alkali metal xylene sulfonate, about 1% of coconut oil fatty acids, about 1% of the condensation product of one mole of lauric monoethanolamide with one mole of ethylene oxide, about 1% of triethanolamine, about 0.3% of sodium carboxymethylcellulose, about 0.7% of methylcellulose, and from about 22.5% to about 25% of tetrapotassium pyrophosphate.

No. 2,861,953. Packaged Charge for Making Soap, patented by Benjamin H. Thurman, Chicago, assignor, by mesne assignments, to the Union Stock Yard and Transit Co. of Chicago.

The patent claims as an article of manufacture, a dry soap charge including, by weight, approximately 45 percent of yellow grease containing at least 5 percent free fatty acid, approximately 8-9 percent caustic soda, approximately 25 percent of an approximately 41 percent sodium silicate solution, and approximately 21-22 percent water softeners chosen from the group consisting of water soluble phosphates, carbonates and silicates, the caustic, sodium silicate solution and water softeners being distributed through the saponifiable material so that the grease coats and covers them.

No. 2,861,912. Method for Combating Pests and Preparations Suitable Therefor, patented by Richard Sallmann, Binningen, Switzerland, assignor to Ciba, Ltd., Basel. This patent teaches a method for combating insects which comprises applying to the objects which are to be protected against the insects an insecticidal amount of a chloral-phosphite ester condensation product, said product being prepared by adding together 1 mol of chloral and 1 mol of a phosphite ester of the general formula



where each of R and R₂ represents a radical selected from the group consisting of saturated aliphatic hydrocarbon radicals containing 1 to 4 carbon atoms, phenyl radicals and chlorinated phenyl radicals, R₁ represents a saturated aliphatic radical containing 1 to 4 carbon atoms, X and Y are each a member selected from the group consisting of oxygen, nitrogen and sulfur, and Z is a member selected from the group consisting of oxygen and sulfur, thus forming a condensation product.

No. 2,861,955. Detergent for Hard Water, patented by Robert D. Aylesworth, Glendale, O., assignor to Emery Industries, Inc., Cincinnati. Described is a bar of soap consisting essentially of a homogeneous mixture of 80-90% by weight of the sodium salts of fatty acids of from 8-22 carbon atoms chain length and from 20-10% by weight of a water soluble quaternary ammonium compound having a molecular weight of between 175 and 600, said soap composition being resistant to precipitation by hard water.

No. 2,864,770. Liquid Detergent Composition, patented by Homer W. McCune, Wyoming, and Oscar T. Quimby, Cincinnati, O., assignors to Procter & Gamble Co., Cincinnati. The invention covers a thixotropic liquid detergent consisting essentially of: (1) an organic vehicle, fully water soluble, with a specific gravity greater than about 1, said vehicle including not less than ⅓ by weight of a member of the group consisting of glycols with not more than 4 carbon atoms in the molecule, glycerine and mixtures thereof; (2) a calcium sequestering phosphate substantially insoluble in said vehicle, said phosphate

being in particulate form, at least about 1/6 of the particles thereof, and sufficient to maintain a suspension in said vehicle settling not more than about 5% in four weeks, having a particle size not greater than about 0.5 micron, the remainder of said particles being no larger than about 25 microns, said phosphate being in ratio to the synthetic detergent of 1:1 to 4:1; and (3) a detergent chosen from a class consisting of sulfated and sulfonated, anionic, non-soap, detergents fully soluble in said vehicle, said anionic synthetic detergent constituting at least 10% of the whole composition, and enough to achieve adequate heavy duty detergency, but not over 25% and the solution of anionic synthetic detergent in the vehicle having a viscosity in the range from about 0.5 to about 2.0 poises.

No. 2,860,106. Urea-Phosphoric Acid Cleaning Composition, patented by Lawrence L. Little and Gilmore Chen, Morris Plains, N.J., assignors to E. F. Drew & Co., New York. This invention consists of an acid cleaning composition comprising a mixture of the crystalline addition product of urea and phosphoric acid, said product having a pH below 4.7, the ratio of urea to concentrated phosphoric acid by weight being about 1 to 2, with a wetting agent taken from the class consisting of quaternary ammonium cationic wetting agents and polyglycol ether non-ionic wetting agents having 10 to 100 glycol radicals.

No. 2,861,914. New Halogen and Phosphor Containing Compounds and Method for Their Use, patented by Richard Sallmann, Binningen, Switzerland, assignor to Ciba, Ltd., Basel. A method is revealed for combating pests which comprises treating the objects which are to be protected against the pests with an effective amount of a condensation product from a trialkylphosphite, the alkyl radicals of which contain 1 to 4 carbon atoms, with a trichloroacetic acid aryl ester, the aryl radical of which is selected from the group consisting of phenyl, chlorophenyl, lower alkylphenyl, nitrophenyl, lower alkoxyphenyl, cyclohexylphenyl, *n*-naphthyl and *β*-naphthyl radicals.

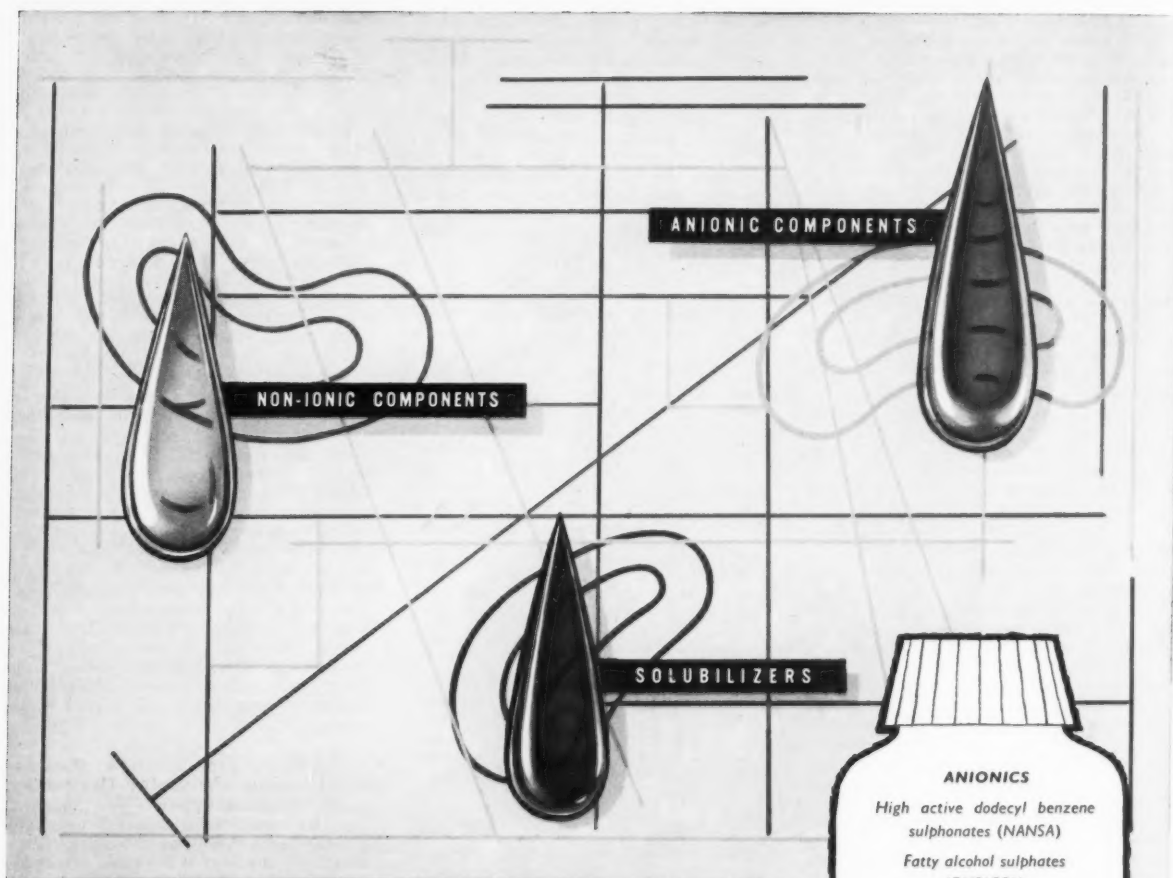
No. 2,861,965. Anti-Moth Composition Containing Polyvinyl Chloride and Naphthalene, patented by Antonio Roncorini, Milan, Italy, assignor to S.p.A. Fibre Tessili Artificiali, Milan. A plastic compound is claimed, composed of 100 parts by weight of polyvinylchloride, 35 parts by weight of dioctyl phthalate, 1 part by weight of cadmium stearate, 0.4 part by weight of calcium stearate, 2 parts by weight of mineral oil and 6 parts by weight of naphthalene.

No. 2,857,309. Dimethylbenzyl Chrysanthemumates as Insecticides, patented by William F. Barthel, Catonsville, Md. Described is an insecticide comprising a member selected from the group consisting of 2,4-dimethylbenzyl chrysanthemumate and 3,4-dimethylbenzyl chrysanthemumate in an inert carrier.

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Products and PROCESSES

Tinting Detergents

A dye or pigment is incorporated in a powdered detergent in such a fine state of subdivision that the powder itself is not appreciably colored. The tint becomes really apparent only when the detergent is dissolved in water. To achieve this result the coloring matter must have a particle size below 20 microns and preferably below five microns. Incorporation of the coloring material in the detergent powder may be accomplished by batch or continuous procedure.

Colored detergents of the usual type are made by the addition of the dye or pigment at a processing stage when the composition is in the liquid state; for example, to a slurry prior to spray-drying. British patent 801,018; 1958, Thomas Hedley & Co., Newcastle-upon-Tyne.

—★—

Myristyl from Dehydag

Myristyl alcohol having a 95 per cent tetradecanol content is now available from Dehydag (Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany). Dehydag's exclusive agent in the United States is Fallek Products Co., 165 Broadway, New York. Myristyl alcohol ($C_{14}H_{29}OH$) can be readily sulfated and the sulfates thus obtained yield detergents of desirable properties, according to Dehydag.

—★—

New Armour Cationic

Good foaming, corrosion inhibiting, and bactericidal properties are claimed for a new cationic surface active agent developed by the Chemical Division of Armour & Co., Chicago 90. Coded "RD-2873-P", the new compound is a 40 per cent isopropanol solution. It is soluble in water, benzene, hexylene glycol and carbon tetrachloride.

Aqueous solutions of "RD-

2873-P" are claimed to yield copious and stable foam. Volume and stability of the foam are only slightly affected by water hardness, solution temperatures, and high salt concentrations, according to Armour.

Nearly complete control of micro-organisms in cooling water is reportedly effected by "RD-2873-P". The cationic surfactant is also said to act as a corrosion inhibitor of steel in water systems.

—★—

P.V.P. in Barrier Cream

Improved protective qualities are claimed for an emulsion type barrier cream incorporating 0.2 to two per cent by weight of polyvinyl-pyrrolidone. The P.V.P. is to have a K-value of 10 to 100. The term K-value is a measure of the degree of polymerization and is derived from the relative viscosity of a solution of the polymer.

The emulsion type barrier cream contains the following ingredients:

	parts
Glyceryl monostearate	8
Magnesium stearate	14
Beeswax	3
Petrolatum	10
Mineral Oil	5
Water	60

To this aqueous emulsion is added one part of P.V.P., K-value 30. In addition to improved protective properties, this cream is said to exhibit an emollient effect and to facilitate removal of dirt and grease from the skin. British patent 797,992, 1958, British Oxygen Co., London.

—★—

Milder Detergents

Cutaneous properties of detergents based on alkyl sulfates or alkyl benzene sulfonates are improved by minor additions of alkyl ether sulfates and other non-ionic products.

Alkyl sulfate detergents of desirable solubility, sudsing, and cleansing properties are derived from a "middle cut" of coconut

alcohol. This alcohol normally contains about 67 per cent C_{12} fatty alcohol, most of the remainder being C_{14} and C_{16} alcohols with a small proportion of C_{10} . The middle cut should include at least 50 per cent of the C_{12} alcohol. The various alkyl sulfates and alkyl benzene sulfonates e.g. sodium, potassium, ammonium, etc., form water soluble detergent salts of these organic sulfuric acid reaction products.

A basic difference exists in the manner in which alkyl sulfates and alkyl benzene sulfonates affect the skin. Tests on guinea pigs show that alkyl sulfate causes cracking of the test animals' skin and alkyl benzene sulfonate used in the same way causes the skin to thicken.

Additions of alkyl ether sulfates and other non-ionics are claimed to increase mildness and to favorably affect detergency of the resulting combinations. British patent No. 797,119, 1958, Thomas Hedley & Co., Newcastle-on-Tyne.

—★—

Soap Making Phenomena

Certain interesting phenomena in saponification have never been completely explained, according to N. G. Chatterji, writing in a recent issue of the *Indian Soap Journal*. The relationship between rate of saponification and strength of lye is cited as an example. Saponification rate is most rapid with lye of about 36°Be (33 per cent NaOH solution). This observation was found to apply to all common oils and mixtures thereof. Weaker or stronger lye slows up the process. This empirical information is utilized in certain continuous soap-making processes.

A series of experiments concerned with the influence of physical factors on the solubility of soap showed the rate of solution of genuine settled soap (about 63 per cent fatty anhydrides) to be much below that of the milled and plodded soap (about 82 per cent fatty anhydrides) made from the

(Turn to Page 149)

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By John W. McCutcheon

Consulting Chemist

RETURNING from an extended business trip to Brazil and other South American countries the author travelled by way of the West Coast, Peru, Ecuador, and Colombia. First stop was Lima, Peru, a beautiful city, right on the coast. This is a hard water area and detergents have a strong hold on the market. Most of these products are imported. But Lima has a small local Procter & Gamble factory which makes the South American equivalent of "Tide", called "Ace". The author enjoyed the privilege of spending a morning going through this plant, which is one of the smallest and neatest factories he has seen in a long time. Currently P & G is making just the one product, "Ace", at its Lima installation, but is packaging it in various sizes. A heat sealed cellophane package containing about two ounces of material, is one of the more popular sizes.

Visiting an industrial detergent plant in this area the author was surprised to notice eaves troughing and down pipes although he had been told that it never rains in this region. Questioned on this point the plant owner conceded that it might rain once in a while. So we were left wondering what constitutes a rainfall in Lima, Peru.

As you travel up the coast into Ecuador you fly parallel to the Andes and see their snow capped ridges stretching in the far distance. For a considerable time the plane passes over coastal desert area. Quito, capital of Ecuador, lies in a saucer-like depression among the hills, 8,000 feet above sea level but only 15 miles south of the equator. Quito's climate is cool and comfortable thanks to the



high elevation. The people of Quito are rather poor, although there is a small residential district with beautiful homes. As in Peru, the water is hard and detergents play an important part. Most of these are imported and expensive by our standards as are many of the luxury items in the same category. Super-market shelves carry practically all types of detergent products which you would find in America plus a number of imports from Europe. These include "Liquid Lux", "Ivory Flakes", "Rinso", "Lux Flakes", "Persil", "Ace", "Fab", and others.

The bath size "Lux" toilet bar costs about 40 cents American money, "Palmolive" bath size about 45 cents; "Camay" regular 26 cents and "Palmolive" regular about 27 cents. Comparisons are approximate for two reasons. Prices are only round figures based on 16 sucres to the dollar. While the bars look about the same shape and size as those sold in the United States, some of them originate in other countries. "Lux" bars for instance come from Port Sunlight, England. We had no opportunity to accurately weigh these bars and the above figures are therefore a little "elastic".

However, a few of the powdered soap and detergent products, were examined a little more closely. Henkel's "Persil" sells for four sucres per 159 grams, net weight, which equals 71 cents a pound. "Lux Flakes" from Port Sunlight cost 6.50 sucres per 161 grams net weight or \$1.14 a pound. "Fab" is priced at six sucres for 229 grams or 74 cents a pound. "Deja", made locally by a crystallization process, is priced at 5.99 sucres for 278 grams or 61 cents a pound.

Laundry bars of local manufacture were in evidence and have doubtless a large market among the peasants. Few soap or detergent factories appear to exist in Ecuador, no doubt because the market is very small in size.

Colombia also is a hard water region. However, one factor hampering commercial development in this country is an unsettled political situation.

No significant detergent industry exists in Bogota, the capital city. The author was invited to visit plants in Barranquilla and Cartagena, but time did not permit him to do so.

BANK lubrication is an interesting novel development in the packaging equipment field. In this type of lubricating system all important points of lubrication are connected by small tubes to a main heading bank. When lubrication is due, a pressure gun is applied to the dozen or more points, all located in one place. This arrangement prevents any point from being overlooked.

On a fairly large packing machine three or four more banks may be brought out to the side, which permits lubrication of every single point without shutting down the unit, without working dangerously close to some operating parts, and with a minimum risk of missing a point.

This appears to the author to be a good idea not only for packaging equipment but for any other type of machine requiring



The Shell chemicals listed below are used in the manufacture of many important drugs and cosmetics.

Take a closer look . . .

THIS portrait of a common garden flower, the petunia, shows how much more we may see in a familiar plant on close examination. Throughout the ages, flowers have been both an inspiration and challenge to scientists. Only recently have chemists succeeded in synthesizing pleasing perfumes that rival the fragrance of flowers.

Although the chemicals listed at the right are familiar, it may pay you to take a *closer* look at them. They are available in quantities from a drum to a tank car.

Write your nearest Shell Chemical district office for samples and technical literature.

Acetone
Ethyl Alcohol
Glycerine
Hydrogen Peroxide
Ional® CP
Antioxidant
Isopropyl Alcohol
Methyl Isobutyl
Carbinol
Methyl Isobutyl
Ketone
Tertiary Butyl
Alcohol

SHELL CHEMICAL CORPORATION INDUSTRIAL CHEMICALS DIVISION

Atlanta • Chicago • Cleveland • Detroit • Houston • Los Angeles • Newark • New York • San Francisco
IN CANADA: Chemical Division, Shell Oil Company of Canada, Limited, Montreal • Toronto • Vancouver



several dozen points of lubrication.

To install bank lubrication, no specialized engineering skill is required. It involves drilling out the oil hole, inserting the proper fittings with pressure tubing and leading the latter back to a master panel. The panel is drilled similarly and fitted with lock fittings such as are used with pressure guns. A number of manufacturers make this type of fitting.

—★—

Dicalite Filler Bulletin

A 12-page bulletin (E-41) dealing with the characteristics and applications of "Dicalite" diatomite mineral fillers has just become available from the Mining and Mineral Products Division of Great Lakes Carbon Corp., 612 South Flower Street, Los Angeles 17. The wide range of uses for diatomite fillers includes the manufacture of insecticides. Chemical inertness, high porosity and absorptive power, low density, and virtually neutral pH exhibited by these mineral fillers are important in the insecticide field.

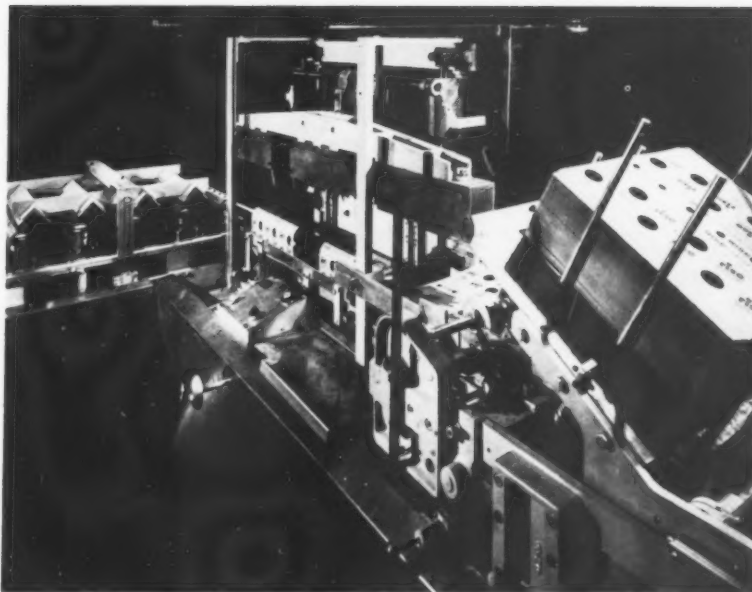
"Dicalite" fillers are extensively used in silver and other fine metal polishes and in cleaners and cleaner-polish combinations for automotive use, as well as in kitchen cleaners. Applications in this particular specialties field are covered in more detail in separate bulletin (C-23).

—★—

New Multi-Packer Machine

A new multi-packer machine has been developed by Container Corp. of America, Philadelphia. Called the "Wrapak 70," the new machine handles a wide variety of cans, bottles, and jars at speeds of up to 70 cartons a minute in single or double line. It supplements the company's "Hi-Speed Uni-Packer," which can pack as many as 1,200 cans a minute, and its "Can Band Loader."

According to Frank Chidsey, CCA's machinery development director, the machine forms a special two to 12 unit carton and is easily adaptable to folding cartons, plastic squeeze bottles, and square or



New multi-packer machine of Container Corp. of America, Philadelphia, which forms a special two to 12 unit carton for a wide range of containers.

round fibre cans. "Wrapak 70" is automatic and can be converted to handle different sized containers within 30 minutes.

—★—

Multi-Meter Cuts Prices

Multi-Meter Corp., Toledo, O., has reduced prices of its "M & M" dispensing pump for drum containers. The pump, which dispenses four ounces with each stroke, has steel or chrome plated internal parts and is adaptable to all size drums between 15 and 65 gallons. Polyethylene tubing is provided with the pump which can be adjusted either up or down or turned completely around to utilize the drum head as a filling table.

New prices for 12 units or more is \$5.90 each; 72 or more \$5.52 each; and 144 or more \$5.24 each. Multi-Meter is located at P.O. Box 6594, 1041 Custer Dr., Toledo 12.

—★—

Colloidal Silica Offered

Colloidal silica in an aqueous or aqueous-alcohol medium is available in commercial quantities from National Aluminate Corp., 6216 West 66th Pl., Chicago 38. Called "Nalcoag," the aqueous suspension is offered with 15, 30, or 35 per cent silica, and the aqueous-alcohol suspension with 21-22%.

The product has applications in floor waxes, soaps and cosmetics, and insecticides, according to its manufacturer. It is reported to have non-skid qualities and pore-filling action when used in floor waxes, oil-absorptive qualities as an additive cleaning agent in soaps and cosmetics. Colloidal silica has been found to be effective in killing insects.

Products and Processes

(From Page 145)

same settled soap. Possible ways of utilizing these observations to improve the lasting properties of toilet soap were suggested by the author in an earlier article. Dr. Chatterji now says: "It would be quite interesting to see this phenomenon explained in the light of the modern study of colloidal, gel and crystalloidal soap structure."

The sweating of soap is cited. While some ascribe this phenomenon solely to the hygroscopic nature of soap and to ambient humidity, the author believes that synaeresis exhibited by many gels must be regarded as a contributory factor. An example is given which cannot be fully explained by accepted theories.



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AST/9



News...

PEOPLE • PRODUCTS • PLANTS

Rome Soap to Liquidate

• • •

Babbitt Sales Set Records

• • •

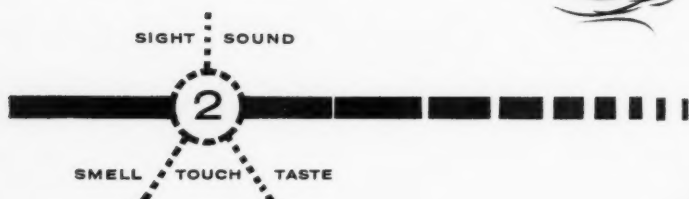
Royce Executive Changes

• • •

Kenney to Oil Specialties

Robert L. Kob, sales manager of the industrial, institutional and government sales division of B. T. Babbitt, Inc., New York, has been elected a vice-president. He is now responsible for development of firm's private brand, contract packaging business.





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News

Kenney in New Post

Thomas J. Kenney has been appointed to the newly created position of manager of technical



Thomas J. Kenney

sales and marketing for Oil Specialties and Refining Co., Brooklyn, N. Y., it was announced recently by R. J. Crockett, vice-president. Previously, Mr. Kenney was sales manager of the metal products division of Wallace Silversmiths, Inc., Wallingford, Conn., which marketed waste receptacles sold through sanitary supply distributors.

Kob Babbitt Vice-President

Robert L. Kob has been elected a vice-president of B. T. Babbitt, Inc., New York, it was announced recently by Marshall S. Lachner, president.

Sales manager of Babbitt's institutional, industrial, and government sales division for the past five years, Mr. Kob is now responsible primarily for the development of the firm's private brand business. This includes the contract manufacture and packaging of liquid detergents for chain organizations, independent wholesalers, and cooperative wholesalers.

Before joining Babbitt, Mr. Kob was product manager in the industrial division of Standard Brands, Inc., New York. In his

position as sales manager of Babbitt's institutional department, he held a leading role in the marketing of the company's "Institutional Formula Bab-O" scouring cleanser which was sold exclusively through sanitary supply distributors.

Mr. Kob's new post is a newly created one and he is succeeded by William Harford.

—★—

Fuld Names Sales Rep.

James F. Pettit has been appointed sales representative in the northern California and Pacific northwest area for Fuld Brothers, Inc., Baltimore. He replaces Dave Gross who has joined another company.

Formerly with Diamond Chemical and Supply Co., Wilmington, Del., Mr. Pettit has had many years of experience in the sanitary chemicals industry.

—★—

In Davies-Young Post

George McKay has been appointed sales promotional representative for Davies-Young Soap Co., Dayton, O., R. H. Gildner, sales manager, announced last month.

Mr. McKay is representing Davies-Young in Alabama, Mississippi, and southern Louisiana, calling on distributors in those areas with the "Buck-eye" line of cleaning and maintenance products.

George McKay



Selig Appoints Dennard

The appointment of Robert E. Dennard as comptroller of Selig Co., Atlanta, was announced



Robert E. Dennard

in January by Simon S. Selig, president.

An attorney and a certified public accountant, Mr. Dennard is responsible for the internal control of the parent company in Atlanta as well as its branches in six cities in the south. He was formerly associated with the Ralph M. Braswell Co., Atlanta, accountants.

—★—

Drackett Foresees Growth

Drackett Co., Cincinnati, manufacturer of household chemical specialties, expects to top its fiscal 1958 record sales, net earnings, and production figures in fiscal 1959, Roger Drackett, president, said recently. The company had sales of \$19,498,000 and net earnings of \$1,534,375 last year.

Mr. Drackett credited the consideration of additional acquisitions, increased research and development programs, enlargement of the sales force, and higher advertising expenditures for his prediction. He also noted that the company is continuing its plant and equipment expenditures this year. Drackett operates plants in five states and Canada.

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DETERGENTS

CONCENTRATED QUALITY CUTS COSTS

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90% Minimum active
dodecyl benzene sodium
sulfonate flake

SP-60

56% Minimum Active
dodecyl benzene sodium
sulfonate paste

ABS-99

96-98% Dodecyl benzene
sulfonic acid

TS-60

60% Triethanolamine
sulfonate liquid

MORE DETERGENT SUDS PER DOLLAR

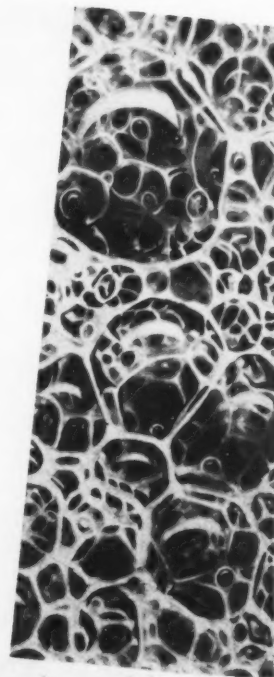
10% HIGHER CONCENTRATION AT EQUAL COST—That is what these unique sulfonates make available to you. The four products above and those listed below give new possibilities in detergent formulation.

- AL-40 AMMONIUM SULFONATE IN ALCOHOL
- SF-40 SODIUM DODECYL BENZENE SULFONATE FLAKE
- KP-60 POTASSIUM DODECYL BENZENE SULFONATE PASTE
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More detergent suds *immediately* increase consumer acceptance for your product! Cold processing by PILOT at temperatures below freezing produces superior sulfonates more homogeneously effective for such use as household suders, industrial detergents and scouring powders. In both dry powders and in liquid solutions, PILOT sulfonates are unique in concentration and purity levels.

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- Sulfonic Acid
- Dodecyl Benzene Sulfonates
- Sodium Toluene Sulfonate

Beam Sets Up Specialties Marketing Unit

B EAM Products, Inc., Milwaukee, was incorporated last month to handle sales, merchandis-

include Howard Eslein, secretary-treasurer, and S. A. Patrickus, controller.



M. A. Becker

ing, advertising and public relations for the chemical specialties manufactured by Beam Chemical Co., Oconto Falls, Wis., it was announced by M. A. Becker, president and chairman of Beam Chemical. Beam's line consists of cleaners and disinfectants for institutional and industrial uses, for public sanitation, and for the consumer market. Branded items include "Sani-Dairy" dairy disinfectant; "Triple-Duty" cleaner for railroads and the automotive industry; and "Wipe-Away" oven and grill cleaner. Plans call for addition of other household detergents and cleaners.

Members of the two firms have interchanged stock, Mr. Becker announced. He founded Beam Chemical in 1946. Newly formed Beam Products, Inc., with temporary offices at 2673 N. Hubbard St., Milwaukee, is headed by Robert R. Long, president, and Richard E. Shireman, executive vice-president. Marceline Skoll is secretary-treasurer. The three Beam Products executives are also officers of Long, Skoll & Shireman, Inc., advertising agency.

Ralph Lemorande, Oconto Falls, executive vice-president of Beam Chemical Co., is vice-president and a director of Beam Chemical, other officers of which



Robert R. Long

Manufacturing operations will continue in Oconto Falls according to Mr. Becker. Beam Chemical will be responsible for manufacturing, packaging, and product research under the new arrangement.

Rome Soap to Liquidate

Rome Soap Manufacturing Co., Rome, N. Y., will soon cease operations and liquidate its business, it was reported last month. Rome Soap has been a local industry for over 60 years.

The firm's production of industrial soaps and solvents is said to have ended last November. Negotiations are reportedly under way for the purchase of the Rome plant by Revere Copper & Brass, Inc.

Royce Executive Changes

Royce Chemical Co., Carlton Hill, N. J., manufacturer of textile chemical specialties, has changed its executive alignment, it was announced last month. Albert J. Royce, Sr., who founded the firm in 1929 and has since served as its president, now becomes chairman of the board and chief executive officer. He is succeeded as president by his son, Albert J. Royce, Jr., formerly vice-president and treas-

urer. Another son of the founder, Howard C. Royce, has been advanced from vice-president in charge of sales to executive vice-president.

Babbitt Record Sales

Sales of B. T. Babbitt, Inc., New York, for December, 1958 and the fourth quarter of last year were the highest in the company's history, Marshall S. Lachner, president, reported last month. December sales were 27 per cent higher than the same month in 1957 and fourth quarter figures were 17 per cent over the comparable 1957 period. Both 1957 sales periods had set highs.

Mr. Lachner credited the company's new promotions, addition of sales personnel, and an all-out effort to avoid year end sales slumps, for the sales records.

A-S-R Elects Parkhurst

Leslie E. Parkhurst has been elected executive vice-president and a director of A-S-R Products Corp., New York, it was announced recently by Sidney Weil, president.

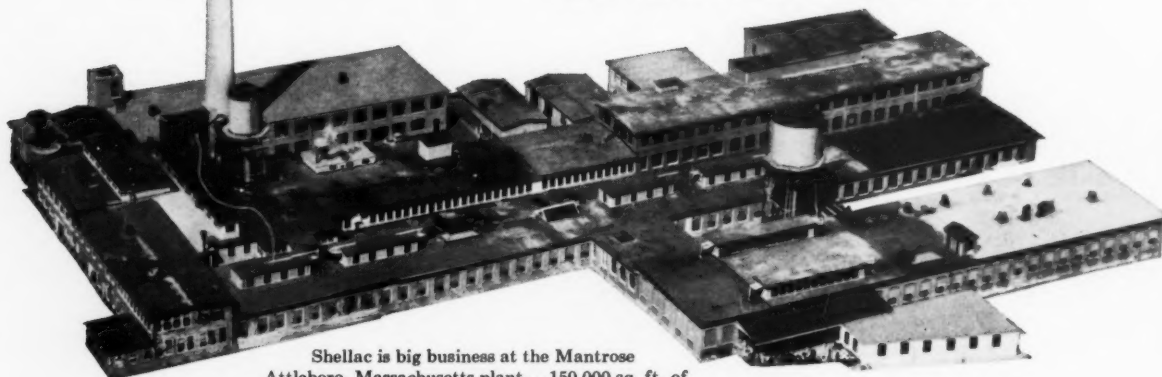
Formerly vice-president — marketing, Mr. Parkhurst is succeeded by Jerome H. Gordon who had been with Kenyon & Eckhardt, Inc., New York advertising agency. Mr. Parkhurst joined A-S-R as field sales manager in 1953 and became a vice-president in 1957.

A-S-R was formerly known as American Safety Razor Corp.

Leslie E. Parkhurst



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Shellac is big business at the Mantrose Attleboro, Massachusetts plant... 150,000 sq. ft. of modern manufacturing facilities devoted to producing superior shellac products for industry and home.

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But surely the most important test of real service is Integrity. It has earned the confidence of our customers, which made Mantrose growth possible. It is an asset we guard most carefully... for only by sincere service can we continue to earn this trust.

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Dow Advances Strouss

Antifreeze, brake fluid, and other automotive chemical specialties must keep pace with the tech-



John P. Strouss

nological developments in the automotive industries, according to John P. Strouss, newly appointed manager of automotive chemical sales for Dow Chemical Co., Midland, Mich. Speaking at a recent antifreeze sales meeting in Midland, Mr. Strouss mentioned increased horsepower, air conditioners, intercoolers, and a trend to-

ward increased use of aluminum in automotive engines as food for thought on the part of the specialties manufacturer.

Mr. Strouss had been a member of the Dow antifreeze sales staff for over ten years prior to his recent appointment, which was announced by Donald K. Ballman, director of sales. Mr. Strouss succeeds Ted Caldwell, Jr., who becomes manager of the firm's new Charlotte, N. C., sales office.

— ★ —

Du Pont Names Hargarten

Jerome J. Hargarten has been appointed service manager of the chlorine products division, electrochemicals department, of E. I. du Pont de Nemours & Co., Wilmington, Del., it was announced last month by the company.

Mr. Hargarten, who joined du Pont in 1950 as a development engineer, directs the activities of solvents technical representatives in Wilmington. He also coordinates metal cleaning work in the field and at the department's sales technical laboratory.

Allied Names Carney

Bruce W. Carney has been appointed assistant sales manager, chemical sales for the plastics and



Bruce W. Carney

coal chemicals division, Allied Chemical Corp., New York. In his new position Mr. Carney is responsible for sales of tar acids and tar bases.

With the company in various sales positions since 1948, his most recent post was sales representative for the central New Jersey area.

Drackett Advances Three

The advancement of three executives of Drackett Co., Cincinnati, to new positions was announced last month by Roger Drackett, president.

Bruce S. Shannon has been elected financial vice-president; Fred Wilson is vice-president—manufacturing; and James A.

Parchmann was named controller.

Joining Drackett in 1948 as controller, Mr. Shannon has had experience in banking, insurance, and business administration. He was most recently vice-president and controller.

Mr. Wilson went with Drackett in 1943 and was production superintendent of the Fern-

dale, O., plant until it was sold in 1957. Since then he has headed production at the Cincinnati plant.

Previously assistant controller, Mr. Parchmann joined Drackett in 1956. He had been associated with an accounting firm and served as controller of a wall-paper concern.

Bruce S. Shannon



Fred Wilson



Joseph A. Parchmann





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COVER ODOR A.D.H. No. 200 (A)
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FLORATYL BOUQUET No. 1009 (I)
COVER ODOR Q.B. No. 1714 (I)
COVER ODOR N-43 (I)
COVER ODOR N-4 (I) (PE)
COVER ODOR W.A.S. No. 300 (W)
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COVER ODOR G.R. No. 27 (PE)
COVER ODOR J.W. No. 2404 (W)
NUTRALCO No. 350 (IN)
COVER ODOR R.C. No. 604 (PE)
COVER ODOR SASS. No. 1954 (A)
COVER ODOR ST. No. 275 (P)

SOAPS

OIL BOUQUET C No. 613
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OIL MIMOSA No. 613
OIL WILD ROSE No. 55
IMITATION GERANIUM S

AEROSOL BOUQUETS

APPLE BLOSSOM No. 55
GARDENIA No. 55
MINT BOUQUET No. 55
OIL SWEET PEA No. 55
SPICE BOUQUET No. 55
WISTARIA No. 55

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BERGAMOT No. 55
CITRONELLA No. 55
GERANIUM No. 55
LAVENDER No. 55
LEMONGRASS No. 55
NEROLI No. 55
SANDALWOOD No. 55
SASSAFRAS No. 55
YLANG YLANG No. 55

PARA BLOCKS

OIL APPLE BLOSSOM No. 4314
OIL LILAC No. 4315
OIL NARCISSUS No. 4316
OIL ROSE No. 4317
PINE BOUQUET No. 4318
BOUQUET R.G. No. 4139
BOUQUET C.R. No. 4140

SHAMPOO ODORS

OIL BOUQUET APPLE BLOSSOM No. 8240
OIL BOUQUET ALMOND No. 8262
OIL CLOVER No. 888
OIL CORYLOPSIS No. 55
OIL BOUQUET H.O. No. 8267
OIL BOUQUET M. No. 55
OIL BOUQUET NARCISSUS No. 55
OIL BOUQUET WILD ROSE No. 55
OIL BOUQUET TV No. 55

LIQUID SOAPS

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New Hercules Directors

Five new members were elected recently to the board of directors of Hercules Powder Co.,



Fred Hogg

Wilmington, Del., it was announced last month by Albert E. Forster, president.

New directors include: Edward G. Crum, general manager, Virginia cellulose department; Fred Hogg, general manager, naval stores department; John H. Long, general manager, paper makers chemical department; Harry A. Thouron, general manager, synthetics department; and J. H. Tyler McConnell, secretary.

With the election, the general managers of each of the company's six main operating departments are represented on the board. The other two include Elmer F. Hinner, cellulose products department, and John M. Martin, explosives department.

Mr. Crum joined Hercules in 1929 and was named assistant general manager of the cellulose products department in 1945. Nine years later he was appointed to his present position.

Also with Hercules since 1929, Mr. Hogg was transferred to the naval stores department in 1930 as a salesman. He became director of sales for the department in 1943 and assistant general manager in 1954.

General manager of the synthetics department since 1955, Mr. Thouron joined Hercules as a

member of the sales staff of the naval stores department. He was appointed assistant general manager of the department he now heads in 1952.

— ★ —

Spencer Heads SAACI

James E. Spencer of Harshaw Chemical Co. was elected and inducted as president of the Salesmen's Association of the American Chemical Industry at the group's annual induction luncheon on Jan. 20. The slate of officers nominated last month was elected. New officers for 1959 are: George W. Poland, Jr., of E. M. Sergeant Pulp & Chemical Co., vice-president; Preston F. Tinsley, Westvaco Chlor-Alkali Division, treasurer; Stewart Cowell, J. T. Baker Chemical Co., secretary.

The following were elected as replacements on the board of directors: James M. Fergusson, Sumner Chemical Co.; John M. Glaze, Hooker Chemical Corporation; Paul E. McCoy, American Potash & Chemical Corp.; Frank Reynolds, Publicker Industries, Inc.; William Wishnick, Witco Chemical Co.; Walter H. Farley, Chas. L. Huisking & Co.

Retiring as directors are: Stewart Cowell, J. T. Baker Chemical Co.; Frederick A. Koch, Dow Chemical Co.; LeRoy P. London, E. I. du Pont de Nemours & Co.; Jerome F. McGinty, Millmaster Chemical Co.; and John Seidler, Whittaker, Clark & Daniels, Inc.

James E. Spencer



Forrest to Phila. Quartz Co.

Joseph R. Forrest has been appointed to the sales staff of Philadelphia Quartz Co., Philadel-



Joseph R. Forrest

phia, Pa., manufacturers of liquid and dry sodium and potassium silicates. Mr. Forrest has completed the company's laboratory and technical training course and has been assigned to the Michigan and Ohio territory with headquarters in Detroit.

Previously associated with Corco Chemical Corp., Bristol, Pa., and Cornwell Chemical Corp., Cornwell Heights, Pa., he has had experience in technical sales service.

— ★ —

Johnson Grants Announced

The Johnson Foundation, founded 21 years ago by H. F. Johnson, chairman of S. C. Johnson & Son, Inc., Racine, Wis., recently announced grants of \$673,710 over the past year, the largest annual disbursement in its history. Of that amount, more than half went to educational groups including, universities, schools, organizations, and students. The remaining amount was donated to health, welfare, civic, and religious organizations.

— ★ —

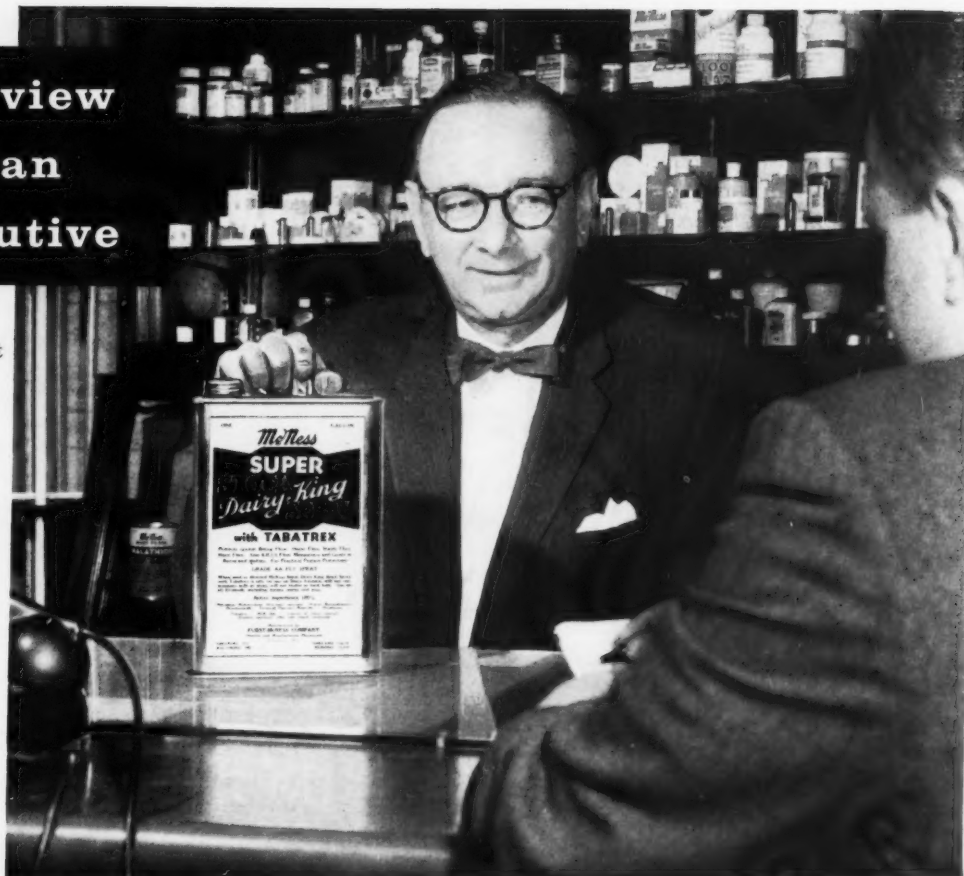
Fire Damages Packwood Co.

A fire at the G. H. Packwood Manufacturing Co., St. Louis, soap manufacturing plant caused \$7,000 damage to the company's building and equipment. Its cause was not determined.

Interview with an Executive

Mr. Charles Furst
President of
Furst-McNess
Company
Freeport, Illinois

(Freeport is located in Stephenson County, the leading dairy county in the State of Illinois. Mr. Furst is well acquainted with dairy problems and requirements.)



Question: Will the McNess Cattle Spray contain TABATREX again this year?

Answer: IT CERTAINLY WILL!

Q. Mr. Furst, what is that can on your desk?

A. This is our McNess Dairy King Super Stock Spray which we introduced last summer.

Q. Introduced? Is this the first cattle spray you have ever sold?

A. No, indeed. However, this one is different from our previous products because it contains TABATREX insect repellent.

Q. How did sales of this new product with TABATREX compare with sales of previous products?

A. They were significantly greater. In fact, our sales of the new cattle spray were greater than in any year since 1946.

Q. To what do you attribute these increased sales?

A. First, to the fact that we had a superior product. We know that this is so because many of our customers have reported increased milk production after using the McNess Spray on their herds.

Q. Was there anything else?

A. Yes, there was. The advertising and educational campaign put into effect by the Glenn Chemical Company last spring and summer was highly effective. Consumer interest was intensified, and consumer demand was heavy. Frankly, we're quite enthusiastic about our results in 1958.

Q. And what about 1959? Will the McNess Cattle Spray contain TABATREX again this year?

A. It certainly will.

**Your Cattle Spray should contain TABATREX too.
Register your label now.**

For approved labeling and complete information, write or phone:

GLENN CHEMICAL COMPANY, INC.

2735 North Ashland Avenue
Chicago 14, Illinois
Phone: EAstgate 7-9350

Manufacturers of



SOAP and CHEMICAL SPECIALTIES



Charles L. Huisking



William W. Huisking



Eugene McCauliff

Huisking Divisions Set Up

Glyco Chemicals Corp., Clintbrook Chemical Co., and Peder Devold Oil Co., all affiliated corporations of Chas. L. Huisking & Co., New York, have been

merged to become operating divisions of the parent firm, according to an announcement last month by William W. Huisking, president.

Along with the merger, executive personnel has been realign-

ed with Chas. L. Huisking, chairman of the board, William W. Huisking, president, and Eugene McCauliff, vice-president. Dr. McCauliff is also president of the Glyco Chemicals division.

Buhler Heads Harrison

C. Walter Buhler has been elected president and board chairman of A. S. Harrison Co., S. Norwalk, Conn., manufacturers of "Preen" wax products. He succeeds Allrich S. Harrison, who died in December.

Mr. Buhler joined the company in 1946, shortly after it was founded, and had been a board member and executive vice-president since 1950.

Also announced was the election of W. William Theis as vice-president-sales. Most recently sales manager, Mr. Theis has

been with the company since 1946.

Newly elected directors include Howard S. Tuthill of Cummings and Lockwood, Stamford, Conn., law firm, and William W. Rohrbach of J. Lee Nicholson and Co., New York, certified public accountants. The board also reaffirmed the membership of Morris L. Rosenblum of Macy's, New York department store.



Realigns Sales Group

The chemical division of Armour and Co., Chicago, has realigned its sales organization into two distinct groups to handle fatty

acids and aliphatic organic compounds. According to B. W. Graham, sales director, the change was necessitated by the continuing need for highly specialized chemical sales representatives and the demand for technical data, product application information, and improved service.

Paul L. Sheppard, recently appointed sales manager, and his staff will be responsible for fatty acid-industrial oil sales exclusively.

Sales manager of aliphatic organic compounds is L. M. Miller, assisted by three regional managers and their sales staffs.

C. Walter Buhler



W. William Theis



B. W. Graham



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Aniline Names Shelton

Harold G. Shelton has been appointed general manager of the dyestuff and chemical division of



Harold G. Shelton

General Aniline & Film Corp., New York, it was announced last month by Philip M. Dinkins, president. Formerly director of marketing, Mr. Shelton replaces Mr. Dinkins who was recently elected president succeeding John Hill-dring, now board chairman and chief executive officer.

Mr. Shelton joined General Aniline in 1945 as sales manager of the Antara chemicals sales department of the dyestuff and chemical division. In 1957 he was appointed director of marketing for the division. Prior to joining the company, Mr. Shelton was associated with Union Carbide and Chemical Co., New York, for 13 years.

New Emery Catalog

Its "Metholene" series of methyl esters is included for the first time in the new edition of the catalog offered by Emery Industries, Inc., Cincinnati. Listed in the four page edition, published in the form of a file folder, is Emery's line of organic chemicals with product designations, descriptions, and specifications. Included is the company's line of fatty acids and fatty acid esters.

The brochure, titled "Specifications and Characteristics of Organic Chemicals," is available

upon request from Emery, Dept. 5, Carew Tower, Cincinnati 2, O.

Pharma-Craft Changes

Changes in the management of Pharma-Craft Corp., Canbury, N. J., were announced recently by the firm's parent company, Joseph E. Seagram & Sons. Edward Shekman, M.D., has been named interim general manager of Pharma-Craft. Robert Bragarnick, Seagram vice-president of marketing, was appointed to supervise Pharma-Craft advertising. Frank F. Bell, Pharma-Craft president since 1954, and Ralph C. Robertson, director of advertising, have resigned.

Premium Elects Karn V.P.

Harold G. Karn has been elected executive vice-president and general manager of Premium Associates, Inc., Newark, N. J., J. W. Reily, Jr., president, announced recently. The company is a redemption organization for the "Red Scissors Coupon Plan" representing 14 companies including Colgate-Palmolive Co., New York, and its Kirkman soap products and Octagon soaps and detergents.

Mr. Karn, who succeeds John M. Davidson retired, joined Premium Associates at its inception in 1955 after 32 years with Colgate. First in the laundry soap sales department at Colgate in 1922, Mr. Karn later became an executive in the premium department and was appointed manager in 1953.

Harold G. Karn



Vles of Polak's Honored

Erik Vles, treasurer and sales manager of Polak's Frutal Works, Inc., Middletown, N.Y.,



Erik Vles

was honored recently upon the completion of his 40th year with the company. An anniversary dinner was given for him in December at the Orange County (N.Y.) Golf Club during the company's annual sales meeting. Mr. Vles was presented by Polak's with a high fidelity radio-phonograph.

Joining Polak's Frutal Works in Holland in 1918 as a salesman, he traveled extensively throughout Europe for the next 10 years. In 1928, Mr. Vles was transferred to New York where the company maintained an office and warehouse. Manufacturing facilities were established in Middletown in 1950. Mr. Vles continues to manage the company's sales in North America.

Returns From Tour

Jacques d'Aigremont, president of Roure-Dupont, Inc., New York, and its affiliate firm Floramatic, Inc., returned recently from a month's business trip in Central and South America.

Commenting on the market situation in these areas, Mr. d'Aigremont noted the keen competition resulting from the entry of producers from all parts of the world seeking markets there. Despite this, he stated that he found an expanding market for his firm's products.

A PREDICTION COME TRUE...

Writing in the May 1953 issue of DRUG & COSMETIC INDUSTRY (pg. 694-695), Dr. Ernest Guenther predicted that Lavandin Oil of the Abrial type would become "*one of the most economical adjuncts at the disposal of the soap maker.*" This prediction is being realized more and more as sales of this type of lavandin continue to mount in increasing volume. Abrial Lavandin has much to recommend it for the soap maker . . . higher ester content (30-32% as compared to 20-24% for other grades); stronger but less harsh odor than the regular lavandin; and about twice the oil yield per acre. All FRITZSCHE LAVANDIN EXTRA offerings are of this preferred Abrial type. We invite you to sample it and observe these important differences.

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Shulton Names Thiele

Fred C. Thiele has been appointed research administrator for Shulton Inc., New York, it was an-



Fred C. Thiele

nounced recently by George L. Schultz, president. In his new post, Mr. Thiele coordinates the activities of the organic research laboratory, control and analytical laboratories, perfume laboratory and consumer research department.

With the company since 1951, he previously had been production manager of the fine chemicals division and perfume administrator.

Downes to Capital City

Daniel D. Downes has been appointed assistant sales manager of the distillation products division of Capital City Products Co., Columbus, O., manufacturers of fatty acids and other specialty chemicals, it was announced recently by

Daniel D. Downes



E. G. Hibarger, sales manager.

Most recently with Dayton (O.) Oil Co., Mr. Downes has served the chemical, paper, and paint industries for over 30 years. He has also been associated with Brown Oil and Chemical Corp., Staten Island, N.Y., Allied Asphalt and Mineral Corp., New York, and Newport Industries, New York.

Toni Advances Skillman

Paul Skillman has been advanced to drug chains merchandising manager for Toni Co., Chicago, Walter G. Willie, vice-president in charge of sales for the Toni Division of Gillette Co., announced last month. Mr. Skillman succeeds Clark J. Gutman.

Prior to his recent appointment Mr. Skillman served as western region sales manager for Toni. He started with the company as a salesman in 1948.

Plax Containers Booklet

"Plax" *Plastic Containers and Accessories* is the title of a 34-page illustrated booklet just published by Plax Corp., Hartford, Conn. The firm was originally organized in 1935 to develop techniques for fabricating the early thermoplastic resins, pioneered the plastic bottle concept with the advent of commercial polyethylene in 1946, and introduced Jules Montenier's "Stopette" spray bottle in 1947. The squeeze bottle is now being supplemented by mass volume containers of high density polyethylene, which are in direct competition with more conventional and time honored packages.

The booklet describes the research, technical, and design services; and product engineering and decorating facilities offered by Plax. Stock containers and accessories and custom designed units are covered. For each group of stock containers specifications are tabulated and molds available are listed. A special section is devoted to industrial containers, and a list of products packageable in polyethylene is appended.

Dudley Lum to Retire

Dudley F. Lum has relinquished his duties as manager of the Chicago branch office of



Dudley F. Lum

Givaudan-Delawanna, Inc., New York, and its associate companies, Givaudan Flavors, Inc., and Sindar Corp., as a step toward his retirement, it was announced in January by R. E. Horsey, vice-president—sales. Robert L. Williams has been appointed branch manager.

Associated with Givaudan sales and the industry for over 50 years, Mr. Lum has been manager of the Chicago office since 1927. He continues to serve his old customers in the territory.

Mr. Williams has been with Givaudan since 1948 and has served as a director and committee chairman of both CIBS (Cosmetic Industry Buyers & Suppliers) and SAACI (Salesmen's Association of the American Chemical Industry).

Robert L. Williams



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Carbide Advances Three

Lester D. Berger, Jr., has been appointed assistant manager of the new chemicals group of



Lester D. Berger, Jr.

Union Carbide Chemicals Co., New York. In his new position, Mr. Berger is responsible for the major development areas of water-soluble and surface-active agents.

Two product managers, Sebern G. Sellers and Eugene P. Fisler, Jr., have been appointed to assist Mr. Berger. Mr. Sellers is responsible for "Polyox" water-soluble resins and "Cellosize" hydroxyethyl cellulose and Mr. Fisler is responsible for "Tergitol" surfactants.

With Carbide since 1940, Mr. Berger was previously a product manager in the new chemicals group.

Mr. Sellers joined Carbide in 1954 and was a technical representative in the group before his advancement.

Previously in field sales as a technical representative in the Delaware Valley district, Mr. Fisler has been with Carbide since 1950.

New Selig Branch Quarters

New quarters were opened recently for the New Orleans branch of Selig Co., Atlanta, it was announced last month by Simon S. Selig, president. Located at 1729 Benefit St., the new building has expanded warehouse and office facilities that will, according to the company, permit same-day

shipment of all orders. An increase in business volume during the 20 years the branch has been in New Orleans, necessitated the move to a larger building, Mr. Selig said.

Donald Rogers Dies

Donald G. Rogers, 66, former president of the National Aniline Division of Allied Chemical Corp., New York, died Dec. 30th at Valley Hospital, Ridgewood, N.J.

President of the division from 1951 through 1957, when he retired, Mr. Rogers joined General Chemical Co. in 1915. He transferred to National Aniline Division, Buffalo, N.Y., in 1917, became assistant director of research and development in 1929, general manager in 1945 and, finally, president in 1951.

Mr. Rogers is survived by his wife, three sons, and five grandchildren.

Fritzsche Price List

Fritzsche Brothers, Inc., 76 Ninth Ave., New York 11, recently published its semi-annual price list. Included in the 12-page booklet are prices and package lot descriptions of the company's line of essential oils, floral absolutes, aromatic chemicals, and colors.

The price list is available to wholesale purchasers.

Permatex Names Wilkins

Ralph E. Wilkins was recently appointed southeastern regional sales manager for Permatex



Ralph E. Wilkins

Co., Huntington, N. Y. Previously western regional manager, Mr. Wilkins now supervises district sales managers in a 12 state area in the southeast. He has been with Permatex for more than 25 years in the western states.

Also announced was the appointment of Kenneth Carpenter, Jr., as purchasing agent of Permatex. Formerly general office manager, Mr. Carpenter joined the company in 1955.

Permatex manufactures maintenance chemicals and compounds at plants in Brooklyn, N. Y., and Kansas City, Kans.

New quarters in New Orleans for the Selig Co., Atlanta, were opened recently at 1729 Benefit Street. New unit has expanded warehouse and offices.



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Toni Appoints Billingsley

Gene Billingsley has been appointed sales promotion manager for Toni Co., Chicago, it was announced recently by Walter G. Willie, vice-president in charge of sales for Toni which is a division of Gillette Co., Boston. He succeeds Clark J. Gutman.

With Toni since 1953, Mr. Billingsley has served successively as a salesman, sales supervisor, and assistant sales promotion manager. Previously he was with Crowell Collier Publishing Co.

Secretary's Report

(From Page 95)

legislation of interest to our fields of activity. Member companies will be kept fully advised of proposed legislation, enacted laws and regulations. With the help and advice of CSMA counsel there can be the regular comments on the proposals and efforts made to obtain proper revisions before enactment.

All divisions of the CSMA and all committees have assisted in arranging and conducting meetings, and in working on the problems of their groups. Their activities will be reported by the special committees.

A new lot of Official Test Insecticide is being prepared by the Scientific Committee of the Insecticide Division. At the same time, minor revisions in the Pect-Grady Method have been made and will be issued at the time of the release of the new O.T.I.

The executive office expects that many of the proposals for industry activities by the various groups will be formally launched in 1959. Every cooperation will be extended to these projects.

The first retirement under the new pension plan has taken place. Mrs. Smith, who has been with us for over 10 years, retired January 1, 1959. Our work could not have been accomplished without the competent and willing cooperation of A. A. Mulliken, assistant secretary, R. M. Werkheiser, administrative assistant, Mrs. E. D.

Sullivan, executive secretary, Mrs. E. B. Smith, Mrs. Lee Schapira and Mrs. S. McArdle.

All in the executive office look forward to years of increased membership and greater service values for the industries.

Labeling

(From Page 89)

case of accident by prompt action. Instructions should be limited to simple remedial measures which may be taken safely by nonprofessional persons prior to the arrival of medical personnel. They should be limited to the use of simple methods and commercially available materials, and strictly medical treatment should be omitted except when it is specifically required by law. If the product is a "poison" by definition, the word poison with the skull and crossbones should be used. If special handling instructions are necessary, these also should be added. Finally, if it is a household product, the admonition "Keep out of reach of children" or its equivalent should be added.

As mentioned previously, these principles of labeling have been enacted into law in several states. Legislation affecting the labeling of industrial chemicals is in effect in Illinois, Massachusetts, New York City, New York State, New Jersey, California, Hawaii, Oregon. Legislation affecting the labeling of household chemicals is in effect in Connecticut, Texas, Indiana, Minnesota and North Carolina.

Having now learned about the hazardous nature of your product and the type of information which should appear on it, you may ask why should I bother with all that. Well, of course, I just mentioned the statutes in the several states affecting labeling of hazardous chemicals. Violation of any of these, subjects the manufacturer to penalties and other enforcement actions by the administrator.

An even more compelling

reason dollarwise is the manufacturers common law duty to warn those who use his products against reasonably foreseeable dangers that its use may entail. If someone is injured using your product and the jury decides it was not adequately labeled, an adverse verdict will be expensive. Two of the many cases illustrating this point are the Tampa Drug Case involving carbon tetrachloride which ended with a verdict of \$160,000 against the defendant and secondly Kieffer vs. Blue Seal Chemical Company where the jury verdict was for \$250,000 when the plaintiff suffered great mental and physical pain and grotesque disfigurement when burned by caustic material.

Despite these two very compelling reasons, however, I like to think that most companies label their products because they have a genuine desire to give consumers all the information necessary to use their products intelligently and protect them from any hazardous characteristics.

Heavy Duty Detergents

(From Page 52)

This shows that almost 60 per cent of the usage is for laundry, about one-third is for dishwashing, and the remainder is divided among fine fabrics, baby clothes and diapers, and general cleaning.

Although the growth of anionic surface active agents in heavy duty synthetic detergents has been slowed somewhat by the development of low sudsing products based primarily on nonionics, there is good reason for optimism on their state of health. Consideration for the factors we have covered should be helpful in developing the best products possible to please the housewife. Any changes made must be for her benefit.

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- ☐ 3. **Surface Active Agents and Detergents**, by Schwartz-Perry. Two volumes. Volume 1: 590 pages, 51 illus., 4 tables. Covers processes for synthesizing and manufacturing surface active agents, physical chemistry of surface active agents and practical applications of surface active agents. Price: \$13.50. Volume II: Approximately 860 pages, approximately 26 illus. and tables. Covers processing for synthesizing and manufacturing surfactants, special function surfactants and compositions, the physical and colloidal chemistry of surfactants and practical applications of surfactants. Price: \$19.50.
- ☐ 4. **Detergent Evaluation and Testing**, by Jay C. Harris. 220 pages, 26 illus., 15 tables. A critical selection of methods and procedures for the testing of detergents. Price: \$4.50.
- ☐ 5. **Organic Insecticides**, by R. L. Metcalf. 402 pages, 7 illus., 70 tables. Covers most organic insecticides, their chemistry and their mode of action. Price: \$10.00.
- ☐ 6. **Advances in Pest Control Research**, edited by R. L. Metcalf. Volume 1: 522 pages, 11 illus., 13 tables. Covers the most recent advances in all phases of the applied science of pest control. Price \$12.50. (Volume II in preparation)
- ☐ 7. **Modern Chemical Specialties**, by Milton Lesser. 514 pages, 22 illus. Covers formulation, properties and uses of some fifty types of household, industrial and automotive chemical specialties. Price: \$7.25.
- ☐ 8. **Handbook of Cosmetic Materials**, by Greenberg-Lester. 467 pages. Covers the properties, uses and toxic and dermatological actions of over 1,000 materials selected in response to a questionnaire sent to cosmetic manufacturers. Includes a chapter on the skin by Howard W. Haggard, Director, Applied Physiology Laboratory, Yale University. Price: \$13.50
- ☐ 9. **Soap Manufacture**, by Davidson et al, in two volumes. Volume 1: 537 pages, 66 illus., 118 tables. Covers the history of the soap industry, theoretical principles of soap manufacture, raw materials of soap manufacture and the fatty raw materials. Price: \$13.50. (Volume II in preparation)
- ☐ 10. **Cosmetics: Science and Technology**, edited by Edward Sagarin. 1453 pages, 138 illus., 107 tables. Covers origin, development of cosmetic science and discusses individual products such as hand creams, suntan preparations, skin lighteners, shaving soaps and creams, nail polishes and removers, deodorants, aerosol cosmetics and many other cosmetic and toiletry products. Price: \$27.50.
- ☐ 11. **Industrial Oil and Fat Products**, by Alton E. Bailey. 991 pages, 164 illus. 133 tables. Covers the nature of fats and oils, their composition and structure; raw materials; industrial utilization. Price: \$18.00.
- ☐ 12. **Fatty Acids**, by Klare S. Markley. 678 pages, 81 illus., 163 tables. The chemistry and physical properties of fats and waxes. Price: \$14.50.

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Odell Forms Own Firm

Norman Odell, formerly vice-president in charge of public relations for G. M. Basford Co., New York, and account man for the publicity program carried on by the Aerosol Division of CSMA for Basford, has resigned to form his own firm. Known as Norman Odell Associates, Inc., 630 Third Ave., New York, the new firm will handle business, industrial and scientific public relations.

Valve Mounting Boards

Boards on which aerosol valve components and assemblies can be mounted and hung on office walls or stood on desks for fast, easy selection of valve parts needed for specific applications were announced last month by VCA, Inc., Bridgeport, Conn.

Called "VCA Valvu-Boards," they are available for both metered and non-metered VCA valves. Each part is shown in actual size and composition. All parts are identified and are securely fastened to the boards, which are large enough for mounting future designs and developments.

Gert Keller, below, head of Schimmel & Co., New York, was reelected president of the Essential Oil Association of U.S.A., at group's annual meeting in New York last month. Other officers elected at the meeting were John J. Cassullo, Fritzsche Brothers, Inc., vice-president; F. F. Dittrich, Ungerer & Co., secretary-treasurer, reelected, and Ray C. Schlotterer, managing director. Mr. Schlotterer has held the post since the formation of the association.

The executive committee is now composed of P. J. Coutin, Coutin Associates; R. E. Horsey, Givaudan-Delawanna, Inc.; E. Manheimer, J. Manheimer, and B. Polak, Polak's Frutal Works, Inc.



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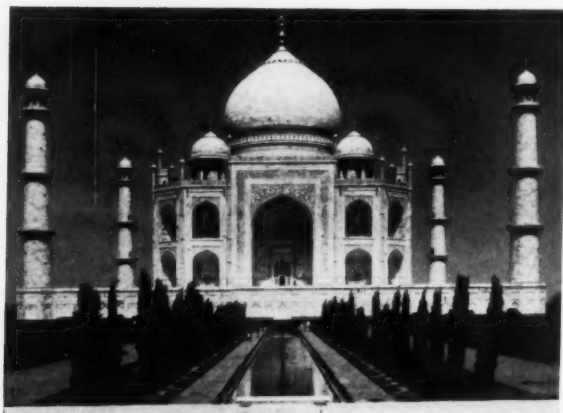
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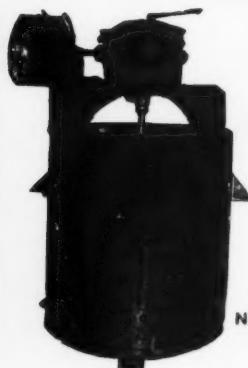
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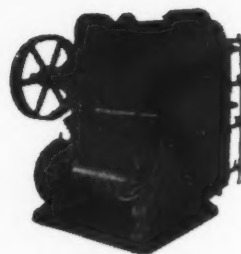


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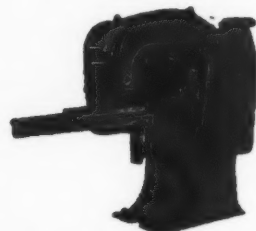


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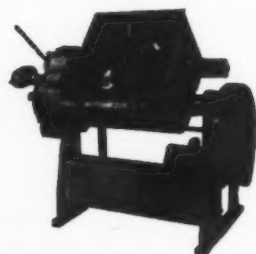
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(Continued on Page 177)

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For Sale: Soap magazines January 1941 through August 1955. Two copies missing, April 1948 and May 1955. Dennis, 15074 Dexter, Detroit 38, Mich.

Sell or Trade: Complete (unbound) issues of Vol. 28 (1952) May and December 1950 copies; January and February 1951 copies October 1953 copy. Want to obtain copies of issues prior to 1949. Address Box 245, c/o Soap.

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As Reader Sees It

(From Page 41)

we have nothing to offer.

E. L. Kuhn,
President,
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Soap Press Correction

Editor:

Thank you for the copy of the December issue of *Soap & Chemical Specialties* which included the story of James Holt (Engineers) Ltd., of Bolton, Lancashire, and their power presses as used in the Bourjois soap factory at Croydon, England.

Unfortunately, in this editorial there are a couple of errors which I very much hope you will be able to correct in a later issue. In the first sentence in the third column on page 201 you refer to the five pound press; this of course should be the five ton press. The other mistake is that the captions of the two photographs have somehow been transposed.

J. McL. Morrish,
Managing Director,
Leedex, Ltd.
London

Metasilicate Plant Opens

The first major plant in France for the commercial production of anhydrous sodium metasilicate went on stream last November at Nogent L'Artaud, near Paris, according to a recent announcement from Cowles Chemical Co., Cleveland, and Saint Gobain, Inc., New York. Production is under a

process licensed from Cowles, and the \$1 million plant is operated by Sifrance, a jointly owned subsidiary of four French silicate manufacturers including Saint Gobain.

Saint Gobain occupies a position in Europe, similar to that of Cowles in the United States, as a producer of a variety of raw materials used in detergent manufacturing and processing. The firm was launched in 1665 and is said to be one of the oldest commercial enterprises doing business today.

Fragrance in Aerosols

(From Page 73)

minister transfusions in the conventional manner.

The American public has been most receptive to so-called "Mood Music." Why not, therefore, think in terms of offering "Mood" fragrances to create delicately and unobtrusively an atmospheric background that will enhance the decor and the theme of a room, a festive occasion, or simply create the proper mood for the benefit of one's guests or the family itself. Perhaps aerosols combined with air conditioning may very well be the answer to this one.

Finally, and at the risk of letting our imaginations run a little wild, it seems to us the aerosol will some day contribute to public health and welfare on a truly grand scale. Sprays capable of sanitizing large areas including hospitals, subway cars, public buildings and so forth may conceivably so minimize the ravages of air borne bacteria as to all but obliterate the so-called virus infections, as well as the common cold. Should this objective ever be attained we shall have put to use in a practical manner what our ancient forefathers achieved psychologically when they burned incense before the deity "for medicinal purposes" so to speak. And, let's not forget that fragrance will continue to play an increasingly important role in the future development of the aerosol.

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Mazzoni Man in U. S.

Dr. L. J. Monticelli, technical adviser to F. Mazzoni, S.p.A., Busto Arsizio, Italy, soap and detergent plant designers and manufacturers, returned to Italy, with his wife, following a two weeks visit to the United States. While here, Dr. Monticelli visited the plants of customers and prospects including Lever Brothers Co.; Colgate-Palmolive Co., Stahl Soap Co. and Andrew Jergens Co.

Ralph C. Jennings Dies

Ralph C. Jennings, 71, midwestern agent for New York Quinine & Chemicals Works Division of S. B. Penick & Co., New York, died Jan. 7 in Chicago. He had been associated with NYQ for more than 50 years, and at one time was vice-president and sales manager.

Pittsburgh Names Shaw

Edison H. Shaw has been appointed midwestern regional



Governor Robert Meyner of New Jersey (second from right) was the featured speaker at ceremonies inaugurating the opening of a new plant of H. Kohnstamm and Co., in Kearny, N. J. With the Governor are (left to right): Louis J. Woolf, chairman of the board of Kohnstamm; Mrs. Meyner; and Paul L. Kohnstamm, president.

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sales manager of the industrial chemicals division of Pittsburgh Coke & Chemical Co., Pittsburgh, according to John L. Frothingham,

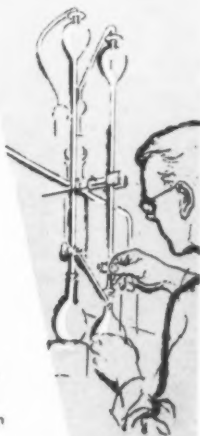
division sales manager. Most recently senior sales representative in the Cleveland office, Mr. Shaw had been with Allied Chemical Corp.

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Index to ADVERTISERS

Aerosol Techniques, Inc.	129	Gillespie-Rogers-Pyatt Co.	80	Price, Dr. Donald	173
Air Reduction Chemical Co.	171	Givaudann-Delawanna, Inc.	36, 146	Procter & Gamble Co.	42
Allied Chemical Corp., Nitrogen Division	140	Glenn Chemical Co.	160	Rapids Machinery Co.	134
Anchor-Hocking Glass Co.	108, 109	Goodrich Chemical Co., The B. F.	106	Rawleigh Co., W. T.	129
Andersen, Dr. Carl N.	173	Harchem Div., Wallace & Tiernan, Inc.	169	Risdon Mfg. Co.	124
Antara Chemicals Div., General Aniline & Film Corp.	44	Hill Top Research Institute, Inc.	173	Rohm & Haas Co.	12
Argueso & Co., M.	168	Hoffman-La Roche, Inc.	86A-86B	Roure-Dupont, Inc.	8, 9
Aromatic Products, Inc.	90	Hooker Chemical Corp.	6, 27	Scientific Associates	179
Atlantic Refining Co.	18	Hope Machine Co.	130	Scranton Aerosol Packaging	129
Averil, Inc.	129	Horix Mfg. Co.	138	Semet-Solvay Petrochemical Div., Allied Chemical Corp.	100
Blockson Chemical Co.	25	Hudson Laboratories, Inc.	173	Shell Chemical Corp.	86, 148
Books	125, 136, 170, 181	Jefferson Chemical Co.	24	Shulton, Inc.	28
Builders Sheet Metal Works, Inc.	126	Johns-Manville	132	Sindar Corp.	104
Candy & Co.	4	Kiwi Coders Corp.	134	Foster D. Snell, Inc.	173
Chemical Specialties Mfrs. Assn.	64	La Wall & Harrison	173	Solvay Process Div., Allied Chemical Corp.	2nd Cover, 65
Chilean Iodine Educational Bureau, Inc.	172	Leberco Laboratories	173	Solvents & Chemicals Group, The	32
Claire Mfg. Co.	129	Leeben Color & Chemical Co., Inc.	176	Stalfort & Sons, Inc., John C.	129
Colgate-Palmolive Co.	84	Mahoney, John J.	173	Stauffer Chemical Co.	11
Colton Co., Arthur	128	Mantrose Corp., The	156	Stepan Chemical Co.	7
Columbia-Southern Chemical Corp.	178	Manufacturers Aid Co.	129	Stillwell & Gladding, Inc.	173
Commercial Solvents Corp.	82	Marchon Products, Ltd.	144	Sun-Lac, Inc.	129
Consolidated Packaging Machinery Corp.	130	Maryland Glass Co.	114	Terriss Division	178
Continental Can Co.	118A	McCutcheon, Inc., John W.	173	Thomasson of Pa., Inc.	129
Continental Filling Corp.	110	McLaughlin Gormley King Co.	66	Tombarel Products Corp.	172
Continental Oil Co.	15	Mercantile Wax Division	178	UBS Chemical Corp.	152
Cowles Chemical Co.	10	Molnar Laboratories, Inc.	173	Ultra Chemical Works	59
Cox, Dr. Alvin J.	173	Morton Chemical Co.	88	Ungerer & Co.	3rd Cover
Dawe's Laboratories, Inc.	178	National Aniline Division	26	Union Bag-Camp Paper Corp.	102
Deutsche Hydrierwerke, G.m.b.H.	150	Neumann, Buslee & Wolfe, Inc.	138	Union Carbide Chemicals Co., Div. of Union Carbide Corp.	30, 118B
Diehl & Co., Wm.	176	Newman Tallow & Soap Machinery Co.	174	U. S. Borax & Chemical Corp.	40
Dodge & Olcott, Inc.	98	Norda	3	U. S. Bottlers Machinery Co.	134
Dominion Products, Inc.	129	Onyx Oil & Chemical Co.	162	U. S. Industrial Chemicals Co.	76
Dow Corning Corp.	94	Orbis Products Co.	142	van Ameringen-Haebler, Inc.	75, 4th Cover
Dragoco, Inc.	13	Owens-Illinois Glass Co.	120, 121	Van Dyk & Co., Inc.	171
Dura Commodities Corp.	85	Pace, Inc.	130	Verley & Co., Albert	31
Eastman Chemical Products, Inc.	74	Penick & Co., S. B.	78	Verona Chemical Co.	34
Emery Industries, Inc.	38	Peterson Filling & Packaging Corp.	118, 129	Victor Chemical Works, Inc.	60, 61
Enjay Co.	29	Pfizer & Co., Charles	62	Warwick Wax Co.	166
Ertel Engineering Corp.	136	Philadelphia Quartz Co.	14	West End Chemical Co.	16
Fairfield Chemical Division	96	Pilot California Co.	33, 154	Western Filling Corp.	129
Felton Chemical Co.	23	Plastic & Coal Chemical Div.	92	Westvaco Chlor-Alkali Div.	35
Florasynth Laboratories, Inc.	158	Polak's Frutal Works, Inc.	17	Westvaco Mineral Products Div.	18A-18D
Foremost Food & Chemical Co.	105	Precision Valve Corp.	122	Wisconsin Alumni Research Found	176
Fritzsche Brothers, Inc.	164				
General Chemical Div., Allied Chemical Corp.	127				
Gesell, Inc., R.	179				

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COMING MEETINGS

American Chemical Society, national meeting, Boston, April 5-10.

American Institute of Laundering, annual meeting, Traymore Hotel, Atlantic City, N. J., Mar. 3-4.

American Oil Chemists Society, 50th anniversary spring meeting, Roosevelt Hotel, New Orleans, April 20-22.

American Society for Testing Materials, Committee D-12, annual meeting, Hotel Park Sheraton, New York, March 9 and 10.

Association of Consulting Chemists and Chemical Engineers, symposium and banquet, Shelburne Hotel, New York, April 28.

Chemical Specialties Manufacturers Association, 45th mid-year meeting, Drake Hotel, Chicago, May 18-20; 46th annual meeting, Mayflower Hotel, Washington, D. C., Dec. 7-9.

Drug, Chemical & Allied Trades Section of the N. Y. Board of Trade, annual dinner, Waldorf Astoria Hotel, New York, March 5.

National Hotel Exposition, 44th annual show, Coliseum, New York, Nov. 2-6.

National Institute of Dry Cleaning, annual convention and exhibit, Convention Hall, Atlantic City, N. J., March 5-8.

National Packaging Show of American Management Association, International Amphitheater, Chicago, April 13-16; packaging conference, Palmer House, Chicago, April 13-15.

National Pest Control Association, annual convention, Biloxi, Miss., Oct. 19-22.

National Sanitary Supply Association, 36th annual convention and trade show, Conrad Hilton Hotel, Chicago, April 12-15; 37th annual convention, Fontainebleau Hotel, Miami, Fla., May 22-25, 1960.

Society of Cosmetic Chemists, spring meeting, Commodore Hotel, New York, May 7; New York Chapter, monthly meetings, New Yorker Hotel, March 4, April 1, Sept. 9, Oct. 7, Nov. 4.

Synthetic Organic Chemical Manufacturers Association, monthly luncheons, Roosevelt Hotel, New York, Feb. 10, March 11, April 14; annual outing, Cavalier Hotel, Virginia Beach, May 11-13.

Toilet Goods Association, 24th annual convention, Waldorf-Astoria Hotel, New York, May 12-14.

Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco, Aug. 11, 12 & 13.

Tale Endo

RALPH Hart, vice-president of Colgate-Palmolive, joined in the festivities at a community breakfast given by "True Story" magazine on the final morning of the recent soap industry convention in New York. Along with the scrambled eggs and sausage, a lady palmist was in attendance. She read Senor Hart's palm and among other things told him that "this year your tide of fortune will really come in." At the mention of "tide," he looked a bit startled. Maybe he suspected that some P&G prankster was pulling his leg.

The hunt for an effective shark repellent goes on. Today, it's mosquitoes; tomorrow, it's sharks. The American Institute of Biological Sciences Shark Research Panel, which is an international group headed by Prof. Perry W. Gilbert of Cornell University, is trying to find out what attracts sharks,—and most of all, what chases them away. The fellow who said sharks are harmless makes "dangerously misleading" statements, according to Prof. Gilbert. As for us, we'll be some place else when Mr. Shark shows up, repellent or no.

Dr. Emil Klarmann, vice-prez of Lehn & Fink, former prez of CSMA and the Cosmetic Chemists, has a number of college degrees. Recently, we inadvertently conferred a brand new one on him without his knowledge or consent. Via a typographic error, we made him a "doctor of service" whatever that might be. A quick check indicated that it should have read "doctor of science." Dr. Klarmann assured us that he did not want any degrees, real or imaginary, to which he is not entitled, including our newest, "doctor of service."

American bathrooms recently have gone from the austere to "the voluptuous," according to the National Assn. of Plumbing Contractors. Frankly, we never heard of a "voluptuous" bathroom. We think the fellow means voluptuous. But be that as it may, these new fancy-dan bathrooms in colors demand fancy colored soaps. They tell us that in the movie colony at Hollywood, a hostess would sooner be caught dead than have a cake of white soap in a pink bathroom. And we always thought that voluptuous applied to dames, shapely ones!

Roman emperors used gold bathtubs and the like, but we figured in this day and age any such would be looked upon as a vulgar display of wealth. Now we see an ad. in a recent issue of "The New Yorker" offering a fancy-looking gold plated faucet for milady's tub. This is done in the form of a swan and is plated not with 14 kt. but 24 kt. gold, mind you. Anybody interested in such fancy bathroom plumbing can buy one from Sherle Wagner, 123 E. 57 St., N. Y. 22. We now feel it is the duty of some enterprising slob in the soap

business to put out a gold plated soap to go with this fancy bathroom fixture.

More Varleys! A son, Porter C. Varley, was born January 22 to Mr. & Mrs. James G. Varley of St. Louis bringing their count to a lucky seven, four girls, three boys. This makes James Varley, Sr. a grandfather for the 16th time. And incidentally, James, Sr.—known as plain Jim while his 6 foot-two son, James G. is known as "Little Jim"—and Mrs. Varley will celebrate their 50th wedding anniversary come next June. The other son, Jack Varley is president of James Varley & Sons (He too is a grandfather.) James G. is sales manager.

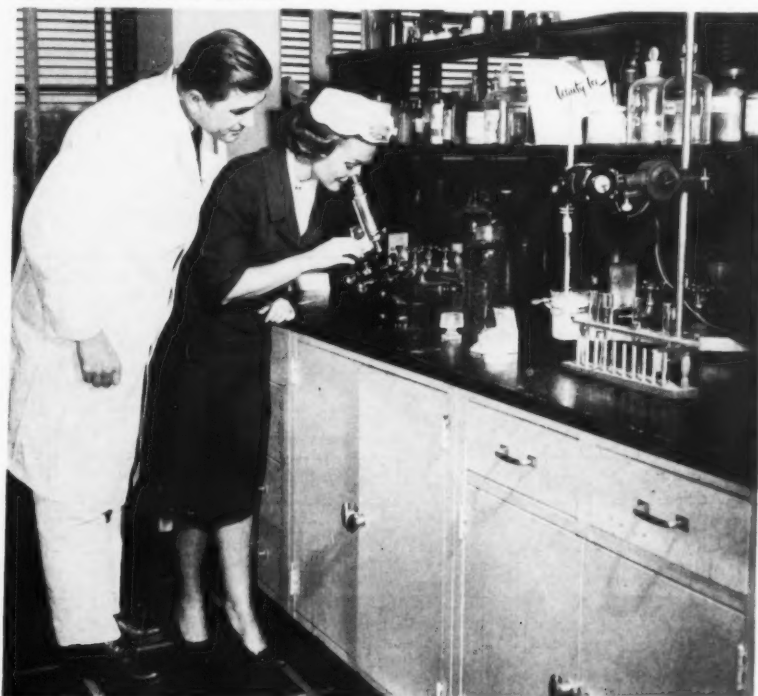
With the recent resignation of Bridgeport Brass Co. as a member of CSMA, there was marked the passing out of the business of one of America's pioneers in aerosol production. Their aerosol division was sold to Shulton some months ago. And with the passing go two men who were outstanding leaders in aerosol developments,—going away back to World War II when Bridgeport pioneered aerosol "bombs" for the Army.—Bill Baulieu and Jack Mills.

The old order changeth; S. B. Penick & Co. not so long ago moved from their old offices at 50 Church St., N. Y. to new quarters at 100 Church St. The new offices are really palatial, with a fountain in the reception lobby, by gosh. Now, Penick have been in business for close to half a century, give or take a year or two, and in their old quarters, we have a hunch they had some of the furniture that was used by S. B., Sr. when he started the business. It's been completely cleaned out. And, the new office setup is really startling.

Frank Luther, perennial bachelor of the soap industry and Washington representative of the Soap Association, kept the secret for six months. He was married last July 31 and the low pup never told us. He arrived at the soap industry convention last month with his bride and surprised a lot of people. The lovely lady is the former Mrs. Lorraine King of New York. Her mother, Mrs. Edward A. Pruden, met the "bride and groom" in N. Y. Well, we had a hunch that sooner or later somebody was going to clip Frank's wings. It's happened!

Is it possible Ellen Oppenheimer, eldest daughter of Alice and Leonard Oppenheimer, is old enough to become engaged? Ellen, whose dad is vice-president and secretary of West Chemical Products, Inc., announced her engagement recently to Don Oasis, who will graduate at Brown University this June and then study dentistry at Tufts.

LADY IN A LAB: Donna Reed, star of Shulton-sponsored Donna Reed (TV) Show, stopped off at research lab, to observe under the microscope some of the products she recommends, during a recent visit to the plant of Shulton, Inc., at Clifton, N. J. Heinz Eierman, Shulton chemist, is leading man in this photo. Miss Reed and her husband-producer, Tony Owen, spent half a day in Clifton as guests of George Schultz, president of Shulton.



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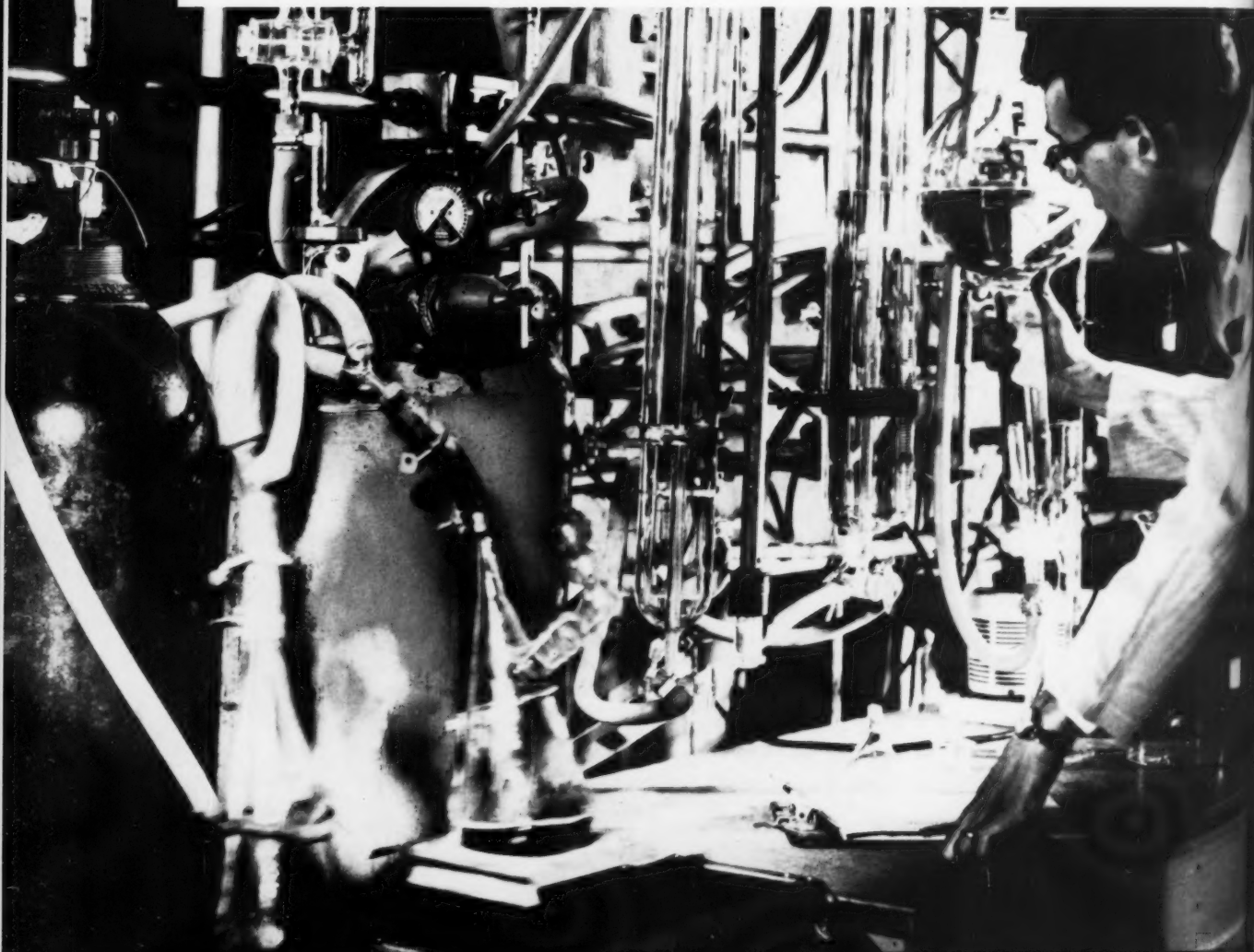
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